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ACTUARIAL STANDARDS BOARD

Actuarial Standard
of Practice
No. 20

Discounting of Property/Casualty Unpaid Claim Estimates

Revised Edition

Developed by the
Casualty Committee of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
September 2011

Doc. No. 163

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September 2011

TO: Members of Actuarial Organizations Governed by the Standards of the Actuarial Standards Board and Other Persons Interested in Discounting of Property/Casualty Unpaid Claim Estimates

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 20

This document contains the final version of a revision of ASOP No. 20, *Discounting of Property/Casualty Unpaid Claim Estimates*.

Background

ASOP No. 20 was originally adopted by the ASB in April 1992. The ASB charged the Casualty Committee with preparing this revision to ASOP No. 20 to reflect current terminology and practice, and to provide more consistency with the language in ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*.

Exposure Draft

The exposure draft of this revised ASOP was issued in December 2010 with a comment deadline of May 1, 2011. The Casualty Committee carefully considered the five comment letters received and made changes in several sections in response. For a summary of the issues contained in these comment letters, please see appendix 2.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB adopted this revised standard at its September 2011 meeting.

ASOP No. 20—September 2011

Casualty Committee of the ASB

Beth Fitzgerald, Chairperson

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Raji Bhagavatala	David J. Otto
Larry Haefner	Marc B. Pearl
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Actuarial Standards Board

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 20

DISCOUNTING OF PROPERTY/CASUALTY UNPAID CLAIM ESTIMATES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose— This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to discounting an unpaid claim estimate to present value for property/casualty coverages. Any reference to "unpaid claims" in this standard includes (unless explicitly stated otherwise) the associated unpaid claim adjustment expense even when not accompanied by the estimation of unpaid claims.

1.2 Scope—This standard addresses the discounting to present value of unpaid claim estimates for property/casualty coverages. In determining the undiscounted unpaid claim estimate, the actuary should be guided by ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*.

This standard applies when performing professional services related to developing discounted unpaid claim estimates only for events that have already occurred or will have occurred, as of an accounting date, exclusive of estimates developed solely for ratemaking purposes. This standard applies when estimating discounted unpaid claims for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables.

This standard applies only with respect to discounted unpaid claim estimates that are communicated as an actuarial finding in an actuarial document (as described in ASOP No. 41, *Actuarial Communications*). Actions taken by the actuary's principal regarding such estimates are beyond the scope of this standard.

The terms "reserves" and "reserving" are sometimes used to refer to "unpaid claim estimates" and "unpaid claim estimate analysis." In this standard, the term "reserve" is limited to its strict definition as an amount booked in a financial statement. Services described above are covered by this standard, regardless of whether the actuary refers to the work performed as "reserving," "estimating unpaid claims" or any other term.

This standard does not address the appropriateness of using discounted unpaid claim estimates in specific contexts.

This standard does not address the appropriateness of including a risk margin in specific contexts.

This standard does not apply to the estimation of items that may be a function of discounted unpaid claim estimates or claim outcomes, such as (but not limited to) loss-based taxes, contingent commissions and retrospectively rated premiums.

This standard does not apply to unpaid claims under a "health benefit plan" covered by ASOP No. 5, *Incurred Health and Disability Claims*, ASOP No. 6, *Measuring Retiree Group Benefit Obligations*, or included as "health and disability liabilities" under ASOP No. 42, *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*. However, this standard does apply to health benefits associated with state or federal workers' compensation statutes and liability policies.

An actuary may develop a discounted unpaid claim estimate in the context of issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves. In such context, the actuary should be guided by ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations associated with the issuance of such a statement.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for any actuarial work product covered by this standard's scope issued on or after January 1, 2012.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Book Value—The value of an asset or assets, as included in a financial statement or other financial reporting context.

2.2 Discounted Unpaid Claim Estimate—The actuary's estimate of the present value of the

unpaid claim estimate.

2.3 Investment Risk—Uncertainty surrounding the realization of a specified investment income stream.

2.4 Present Value—The value on a given date of a future payment or series of future payments, discounted to reflect the time value of money.

2.5 Risk-Free Interest Rate—The theoretical rate of return of an investment with zero risk with respect to payment timing and amount.

2.6 Risk Margin—A provision for uncertainty in an unpaid claim estimate.

2.7 Unpaid Claim Estimate—The actuary's estimate of the obligation for future payment resulting from claims due to past events. For clarity and unless otherwise indicated, this estimate is on an undiscounted basis and the terms "unpaid claim estimate" and "undiscounted unpaid claim estimate" are used interchangeably throughout this standard.

Section 3. Analysis of Issues and Recommended Practices

3.1 Appropriateness in Context—The actuary should be aware of the context in which the discounted unpaid claim estimate is to be used. The actuary should use a methodology and assumptions in the discounting process that are appropriate for that context.

3.2 Relative Significance of Assumptions—If both an undiscounted unpaid claim estimate and a discounted unpaid claim estimate are determined, the actuary should be aware of the differences in the relative significance of various assumptions between undiscounted and discounted unpaid claim estimates. For example, a development factor at an advanced maturity (such as a "tail factor") is less significant to a discounted unpaid claim estimate than to an undiscounted unpaid claim estimate. Conversely, a change in the timing of loss payments may be more significant to a discounted unpaid claim estimate.

3.3 Payment Timing for Discounting—The actuary should derive the discounted unpaid claim estimate based on assumptions regarding the timing of future payments. A range of estimates for the timing of payments may be reasonable.

3.3.1 Assumptions—The actuary should consider the reasonableness of the assumptions underlying the estimated timing of future payments. Assumptions generally involve significant professional judgment. Assumptions may be implicit or explicit, and may involve interpreting past data or projecting future trends. The actuary should use assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent.

The actuary should consider the sensitivity of the timing of future payments to reasonable alternative assumptions. (See section 4.1(f) for related disclosure requirements.)

The actuary may provide the principal with results based on a set of assumptions that differ from the actuary's assumptions, subject to appropriate disclosure as described in section 4.1.

3.3.2 Reconciliation of Estimates—The cumulative amount of payments used by the actuary for discounting should be consistent with the amount of the unpaid claim estimate, even if the latter has not been derived by techniques based on payment data.

3.3.3 Consistency of Assumptions—The actuary should use assumptions in estimating the timing of payments that are consistent with the assumptions used in developing the undiscounted unpaid claim estimate to the extent appropriate.

3.3.4 Consistency with Expected Future Conditions—The actuary should determine estimates of the timing of payments that are consistent with conditions expected to prevail during the future payment period. If such conditions are expected to be different from those prevailing during the historical evaluation period, the actuary should make appropriate adjustments.

3.3.5 Data—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to selection of data to be used, relying on data supplied by others, reviewing data, and using data.

3.3.6 Recoverables—The actuary should consider to the extent appropriate the timing and amount of expected recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation) when projecting the timing of future payments.

3.3.7 Unpaid Claim Components—The actuary should consider whether such components that have a material effect on the timing and amount of future payments have been reflected appropriately when projected future payments are comprised of multiple components (for example, line of business, accident year, claim adjustment expense).

3.4 Discount Rates—Projected future payments are discounted to present value using discount rate assumptions.

3.4.1 Discount Rate Basis—Discounted unpaid claim estimates may be used in a variety of contexts and the appropriate selected discount rates are a function of the context. A range of discount rates may be reasonable. Common approaches to selecting a discount rate include:

a. Risk-Free Approach—The selected discount rates in this approach approximate risk-free interest rates. Risk-free interest rates can be approximated by rates of investment return available on fixed income assets having low investment risk and timing characteristics comparable to those assumed in the discounting of unpaid claim estimates.

b. Portfolio Approach—The selected discount rates in this approach are based on the anticipated return from a selected portfolio of assets. The actuary should consider to the extent appropriate the relationships between the book and market values of assets, between the anticipated portfolio rates of return and market rates of return, and between the maturities of the assets and the estimated timing of future payments on unpaid claims. The portfolio rates of return should be net of investment expenses.

c. Discount Rates Requested by Another Party— The actuary is responsible for the discount rates employed in preparing the actuarial findings unless the actuary appropriately discloses otherwise. The actuary should be guided by section 3.4.4 of ASOP No. 41, when using discount rates requested by another party.

3.4.2 Effect of Income Taxes—The actuary should consider whether the discount rates should be consistent with investment returns before or after the payment of income taxes.

3.5 Ranges—The actuary should consider the uncertainty in the discounted unpaid claim estimate when determining a range of estimates. The actuary should recognize that the uncertainty inherent in discounted unpaid claim estimates generally is different than the uncertainty inherent in undiscounted unpaid claim estimates.

Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the discounted unpaid claim estimate and refer to ASOP Nos. 23 and 41 for additional guidance on disclosure.

In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

a. the assumptions as to selected discount rates and the basis for those assumptions, including the effect of income taxes, as described in section 3.4;

b. to the extent practical, the difference between the undiscounted unpaid claim

estimate and the discounted unpaid claim estimate;

c. whether the discounted unpaid claim estimate includes a risk margin, and if so, the basis for the risk margin (for example, stated percentile of distribution or stated percentage load above expected);

d. significant limitations, if any, that constrained the actuary's discounted unpaid claim estimate analysis such that, in the actuary's professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result;

e. the following dates: (1) the accounting date of the discounted unpaid claim estimate, which is the date used to separate paid versus unpaid claim amounts; (2) the valuation date of the discounted unpaid claim estimate, which is the date through which transactions are included in the data used in the discounted unpaid claim estimate analysis; and (3) the review date of the discounted unpaid claim estimate, which is the cutoff date for including information known to the actuary in the discounted unpaid claim estimate analysis, if appropriate;

f. specific significant risks and uncertainties, if any, with regard to actual timing of future payments;

g. significant events, assumptions, or reliances, if any, underlying the discounted unpaid claim estimate that, in the actuary's professional judgment, have a material effect on the discounted unpaid claim estimate, including assumptions regarding the accounting basis or application of an accounting rule;

h. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

i. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

j. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary otherwise deviated materially from the guidance of this ASOP.

4.2 Additional Disclosures—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:

a. When the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided.

b. When the unpaid claim estimate is an update of a previous estimate, the actuary should disclose changes in assumptions, procedures, methods or models that the actuary believes to have a material impact on the discounted unpaid claim estimate and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In 1992, the ASB issued ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*. Prior to that, there was no standard of practice concerning discounting of property and casualty loss and loss adjustment expense reserves. Since the issuance of ASOP No. 20, the ASB has issued ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* and, ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. This revision provides more consistency with the language in these two ASOPs, and is more relevant now with the increased use of discounting related to fair value calculations.

The appropriateness of discounting unpaid claim estimates in various financial reporting contexts is a controversial topic. Traditionally, property and casualty unpaid claim estimates have not been discounted except in certain narrowly defined circumstances. However, the issue of discounting reserves has been discussed for many years. For example, the issue appeared in the 1927 *Proceedings of the Casualty Actuarial Society,* in an article by Benedict D. Flynn. In 1986, the U.S. Congress passed legislation prescribing discounting procedures for income-tax purposes. In the past, most state insurance departments prohibited discounting; some departments have permitted discounting for some lines of business. The National Association of Insurance Commissioners has consistently been opposed to discounting except in certain specific circumstances. The accounting profession is studying the issue as it relates to financial reporting.

Historically, the issue of reserve discounting has been closely related to the issue of risk margins. Undiscounted reserves are often considered to contain a needed implicit risk margin in the difference between undiscounted reserves and discounted reserves. If discounted reserves were incorporated into financial statements, many would argue that an explicit risk margin would become necessary. Suggestions for the treatment of that risk margin include treatment as a liability item, a segregated surplus item, or an off-balance-sheet item.

The discounting of unpaid claim estimates and risk margins are both important elements in estimating the fair value of unpaid claim estimates, yet neither is explicitly included in most current financial reporting. Much of the rationale for unpaid claim estimate discounting is related to the issue of fair value; however, some believe that discounted unpaid claim estimates without risk margin may be a poorer estimate of fair value than undiscounted unpaid claim estimates.

Unpaid claim estimate discounting calculations are commonly performed in conjunction with

valuations of insurance companies for purposes such as acquisition or merger, or with transfers of portfolios or unpaid claims. In these instances and for other reasons, there are increasing numbers of circumstances where actuaries are asked to determine or evaluate discounted unpaid claim estimates.

Current Practices

Actuaries are currently guided by the existing ASOP No. 20. Other ASOPs issued by the Actuarial Standards Board pertaining to discounting of unpaid loss and loss adjustment expense estimates include ASOP No. 23, *Data Quality*; ASOP No. 36; ASOP No. 41, *Actuarial Communications*; and ASOP No. 43. In addition, disclosures related to discounting are required by the National Association of Insurance Commissioners, and guidance may be forthcoming as part of new International Financial Reporting Standards that are currently under development.

Numerous educational papers are in the public domain that are relevant to the topic of discounting and risk loads, including those published by the Casualty Actuarial Society. While these may provide useful educational guidance to practicing actuaries, these are not actuarial standards and are not binding.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *Discounting of Property/Casualty Unpaid Claim Estimates*, was issued in December 2010 with a comment deadline of May 1, 2011. Five comment letters were received, one of which was submitted on behalf of multiple commentators. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. All comments were carefully considered and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the Casualty Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this revised standard.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested that the standard be modified to apply broadly to loss sensitive estimates, such as retrospective premiums or the payment of claims-related assessments.
Response	The reviewers note the focus of this standard was on discounting unpaid claim estimates and, therefore, section 1.2 reiterates similar exclusions found in section 1.2 of ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, which does not apply to loss sensitive estimates.
SECTION 2. DEFINITIONS	
Comment	One commentator noted that the terms "payments" and "future payments" were used throughout the document and suggested that the terms be defined to include the inflow of recoveries in order for it to be clear that potential inflows should be considered.
Response	Section 1.2 identifies that this standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables. As such, the reviewers believe that it is clear that payments and future payments should consider potential inflows and outflows depending on the context.
Comment	One commentator suggested that a definition for discount rate be added to the standard.
Response	The reviewers do not believe that a definition is necessary because it is sufficiently described in sections 2.4 and 3.4.
Section 2.1, Book Value	
Comment	One commentator suggested that the definition of book value be removed because the term is not used in the standard.
Response	The reviewers note the definition is referenced in section 3.4.1(b) and thus made no change.

Section 2.3, Investment Risk	
Comment	Several commentators suggested expanding the list of examples of investment risk to include market risk and reinvestment risk.
Response	The reviewers believe that the definition is sufficiently clear without the need for examples. The examples given previously with credit risk and liquidity risk, and their associated definitions were removed in order to avoid the misunderstanding that they were an exhaustive list.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Appropriateness in Context	
Comment	Several commentators suggested that there may be circumstances where the actuary may use more than one methodology when performing the discounting calculation. For example, multiple methods may be used to determine a reasonable range of discounted unpaid claim estimates.
Response	The reviewers believe that actuaries generally use only one methodology when discounting unpaid claim estimates; however, the reviewers acknowledge that an actuary may want to use more than one methodology in some circumstances. The reviewers believe that use of more than one methodology in this context would be characterized as "a methodology" and hence no change was made.
Section 3.3, Payment Timing for Discounting	
Comment	Commentators interpreted the wording of section 3.3 to imply that an actuary must explicitly project the timing of future payments and that an implicit assumption regarding the timing might be a violation of the standard.
Response	The reviewers acknowledge that the timing of future payments might be estimated implicitly and rephrased this paragraph to avoid confusion.
Section 3.4, Discount Rates	
Comment	One commentator suggested that the term "discount rate" was incorrect and this standard should use "interest rate" in its place.
Response	The reviewers disagree. The term discount rate was chosen to be consistent with other standards of practice as well as other practice areas.
Comment	One commentator interpreted the approaches in section 3.4.1 to be a complete and exhaustive list and asked if that is what was intended.
Response	The approaches are not intended to be an exhaustive list. This section was rephrased to indicate that there may be other approaches.
Comment	One commentator suggested that some liability cash flows may extend beyond the normal range of asset maturity dates and that this standard provides no guidance in these situations.
Response	The reviewers believe techniques to address this situation, such as extrapolation, are consistent with the guidance in sections 3.4.1(a) and 3.4.1(b), and made no change.
Comment	One commentator requested that reference be made to U.S. Treasuries when discussing the use of a risk-free rate for the discount rate.
Response	The reviewers do not believe that sovereign debt or any other asset can be unequivocally defined as having low investment risk even though U.S. Treasuries have been historically viewed as low-risk. The reviewers believe that the risk-free approach in section 3.4.1(a) provides sufficient guidance for the actuary when approximating a

	risk-free interest rate.
Comment	One commentator suggested that a discount rate might be based on a benchmark portfolio of assets and questioned whether or not this was accepted practice according to the standard.
Response	The reviewers note that section 3.4.1(b) does not prescribe whether the portfolio of assets is derived from actual assets or a benchmark. The use of either type of asset will depend on the context as mentioned in section 3.4.1.
Comment	Several commentators objected to the phrase that it is "generally expected" that the actuary is responsible for the discount rates employed in preparing the actuarial findings and suggested section 3.4.1(c) be rephrased accordingly.
Response	The reviewers agree and rephrased section 3.4.1(c).
Section 3.5, Ranges	
Comment	One commentator noted that there are many types of ranges, such as a range of best estimates or a range of possible outcomes, and this section was not clear which type of range was being referenced.
Response	The reviewers changed the word "range" to "range of estimates" in this section. The type of range used will depend on the context and, according to section 4.2(a), the actuary should disclose the basis of the range, if one is provided.
Section 3.6, Risk Margins [Exposure Draft]	
Comment	One commentator disagreed that an undiscounted unpaid claim estimate contains a margin.
Response	This section was removed and a sentence was added to section 1.2, which states: "This standard does not address the appropriateness of including a risk margin in specific contexts."
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator suggested that the amount of the risk margin should be disclosed to the extent practical.
Response	The reviewers believe that in certain cases it may be difficult to quantify the amount of a risk margin and language requiring disclosure of the amount "to the extent practical" could place an undue burden on the actuary.
Comment	One commentator suggested deleting sections (d), (e), and (g) because they are duplicative with other standards.
Response	The reviewers acknowledge that the wording is similar to ASOP No. 43 but these sections are used in this standard to address the context of discounted unpaid claims estimates.
Comment	One commentator suggested that in some cases an estimate is discounted to a different date that may not coincide with the accounting date and suggested that section 4.1(e) include the concept of a separate "discount to" date.
Response	The reviewers agree that there may be circumstances where the estimate is discounted to a date different from the accounting date and believe this standard does not prevent the actuary from using and disclosing the different date. In addition, section 4.1(g) would require the disclosure of a different "discount to" date by virtue of it being a significant assumption underlying the discounted unpaid claim estimate.

ACTUARIAL STANDARDS BOARD

Actuarial Standard
of Practice
No. 36

Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves

Revised Edition

Developed by the
Subcommittee on Reserving of the
Casualty Committee of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
December 2010

Doc. No. 153

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APPENDIXES

December 2010

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 36

This document contains the final version of a revision of ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves.*

Background

In March 2000, the Actuarial Standards Board originally adopted ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* (Doc. No. 069). This standard provides guidance to actuaries when issuing specific types of Statements of Actuarial Opinion.

ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, was adopted by the Actuarial Standards Board in June 2007. This standard provides guidance to actuaries regarding the estimation of unpaid claims, both when such estimates are performed to support a Statement of Actuarial Opinion covered by ASOP No. 36 and in other circumstances.

The Casualty Committee's Subcommittee on Reserving has prepared this revision to ASOP No. 36 to eliminate redundant guidance and language that exists between ASOP Nos. 36 and 43, to maintain consistency between ASOP Nos. 36 and 43, and to clarify and provide further guidance within ASOP No. 36.

First Exposure Draft

The first exposure draft of this revised ASOP was issued in March 2009 with a comment deadline of June 15, 2009. The Subcommittee on Reserving carefully considered the eleven comment letters received and made changes that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was issued in March 2010 with a comment deadline of June 30, 2010. The Subcommittee on Reserving carefully considered the six comment letters received and made changes in several sections in response.

For a summary of the issues contained in these comment letters, please see appendix 2.

The ASB thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB adopted this revised standard at its December 2010 meeting.

Subcommittee on Reserving of the Casualty Committee

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The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.

ASOP No. 36—December 2010

ACTUARIAL STANDARD OF PRACTICE NO. 36

STATEMENTS OF ACTUARIAL OPINION REGARDING PROPERTY/CASUALTY LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to the actuary in issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves.

1.2 Scope—This standard applies to actuaries when providing written statements of actuarial opinion with respect to property/casualty loss and loss adjustment expense reserves of insurance or reinsurance companies and other property/casualty risk financing systems, such as self-insurance, that provide similar coverages, under one of the following circumstances:

a. the statement of actuarial opinion is prepared to comply with NAIC Property and Casualty Annual Statement Instructions, or

b. the statement of actuarial opinion is otherwise prescribed by law or regulation, or

c. the statement of actuarial opinion is represented by the actuary as being in compliance with this standard.

References in the standard to "insurance," "reinsurance," or "self-insurance" should be interpreted to include risk financing systems that provide for risk retention in lieu of risk transfer. This standard does not apply to statements of actuarial opinion subject to ASOP No. 22, *Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers*; ASOP No. 28, *Compliance with Statutory Statement of Actuarial Opinion Requirements for Hospital, Medical, and Dental Service or Indemnity Corporations, and for Health Maintenance Organizations*; or Actuarial Compliance Guideline No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers.*

If the actuary's statement of actuarial opinion includes an opinion regarding amounts for items other than loss and loss adjustment expense reserves, this standard applies only to the portion of the statement of actuarial opinion that relates to loss and loss adjustment expense reserves.

If the actuary is providing a statement of actuarial opinion for discounted loss and loss adjustment expense reserves, the actuary should be guided by both this standard and ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for all statements of actuarial opinion regarding loss and loss adjustment expense reserves issued on or after May 1, 2011.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Accounting Date—The stated cutoff date for reflecting events and recording amounts as paid or unpaid in a financial statement or accounting system. The accounting date is sometimes referred to as the "as of date."

2.2 Coverage—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.

2.3 Event—The incident or activity that triggers potential for claim or claim adjustment expense payment.

2.4 Explicit Risk Margin—An explicit provision for uncertainty in a reserve or unpaid claim estimate.

2.5 Loss—The cost that is associated with an event that has taken place and that is subject to coverage. It is also known as "claim amount." The term "loss" may include loss adjustment expenses as appropriate.

2.6 Loss Adjustment Expense—The costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid. It is also known as "claim adjustment expense."

2.7 Present Value—The value at a point in time of cash flows at other points in time, calculated at selected interest rates. It is also known as "discounted present value" or "discounted value."

2.8 Reserve—An amount recorded in financial statements or accounting systems in order to reflect potential obligations.

2.9 Reserve Evaluation—The process of evaluating the reasonableness of a reserve.

2.10 Review Date—The date (subsequent to the valuation date) through which material information known to the actuary is included in forming the reserve opinion.

2.11 Unpaid Claim Estimate—The actuary's estimate of the obligation for future payment resulting from claims due to past events.

2.12 Unpaid Claim Estimate Analysis—The process of developing an unpaid claim estimate.

2.13 Valuation Date—The date through which transactions are included in the data used in the unpaid claim estimate analysis.

Section 3. Analysis of Issues and Recommended Practices

3.1 Legal and Regulatory Requirements—When an actuary prepares a statement of actuarial opinion to satisfy the requirements of law or regulation, the actuary should have the necessary knowledge to comply with the specific requirements of that law or regulation. The actuary should be satisfied that the statement of actuarial opinion is consistent with relevant requirements of applicable laws and regulations.

3.2 Purpose and Users of the Statement of Actuarial Opinion—The actuary should identify the intended purpose and intended users of the statement of actuarial opinion. For example, the intended purpose may be to satisfy the requirements for such an opinion under the NAIC Annual Statement Instructions, and the intended users may be the company and its regulators.

3.3 Reserves Being Opined Upon—The actuary should identify the following regarding the reserves being opined upon:

a. the reserve amount(s);

b. the accounting date; and

c. the accounting standards applicable for the reserves, if relevant (for example, US SAP, US GAAP, IFRS, etc.).

3.4 Stated Basis of Reserve Presentation—The actuary should identify the stated basis of reserve presentation, which is a description of the nature of the reserves, usually found in the financial statement and the associated footnotes and disclosures. The stated basis often depends upon regulatory or accounting requirements. It includes, as appropriate, the following:

a. whether reserves are stated as being nominal or discounted for the time value of money and, if discounted, the items discounted (for example, tabular reserves only) and the stated basis for the interest rate (for example, risk-free rate, portfolio rate, or fixed rate of x%);

b. whether the reserves are stated to include an explicit risk margin and, if so, the stated basis for the explicit risk margin (for example, stated percentile of distribution, or stated percentage load above expected);

c. whether the reserves are gross or net of specified recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation);

d. whether the potential for uncollectible recoverables is considered in the reserves, when recoverables are involved and, if so, the categories of such uncollectible recoverables considered and whether those categories reflect currently known collectibility concerns or potential ultimate collectibility concerns. Possible categories of uncollectibles include those related to disputes and those related to counterparties in financial difficulty (credit default);

e. the types of unpaid loss adjustment expenses covered by the reserve (for example, coverage dispute costs, defense costs, and adjusting costs);

f. when the opinion is only for a portion of a reserve, the claims exposure to be covered by the opinion (for example, type of loss, line of business, year, and state); and

g. any other items that, in the actuary's professional judgment, are needed to describe the reserves sufficiently for the actuary's evaluation of the reserves.

To the extent the actuary does not know the above items, the actuary should request this information from the principal. If unable to obtain these items from the principal, the actuary should identify what the actuary assumed to be the intended basis of reserve presentation for purposes of the reserve evaluation.

3.5 Scope of the Analysis Underlying the Statement of Actuarial Opinion—The actuary should identify the scope of the analysis upon which the opinion is based. This includes the following:

a. the review date, if it differs from the date the opinion is signed;

b. if separate reserve amounts for different reserve items, such as losses and loss adjustment expenses, are disclosed in the statement of actuarial opinion, whether the actuary's opinion applies to those items in the aggregate or individually; and

c. any other items that, in the actuary's professional judgment, are needed to describe the scope of the actuary's analysis sufficiently.

3.6 Materiality—The actuary should evaluate materiality based on the actuary's professional judgment, any applicable materiality guidelines or standards, and the intended purpose for which the actuary is preparing the statement of actuarial opinion.

The actuary should understand which financial values are usually important to the intended users of the statement of actuarial opinion and how those financial values are likely to be affected by changes in the reserves and future payments for losses and loss adjustment expenses. For example, for a statement of actuarial opinion for an insurance company to be used for financial reporting to insurance regulators, materiality might be evaluated in terms of the company's reported reserves or statutory surplus.

3.7 Reserve Evaluation—The actuary should consider a reserve to be reasonable if it is within a range of estimates that could be produced by an unpaid claim estimate analysis that is, in the actuary's professional judgment, consistent with both ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, and the identified stated basis of reserve presentation.

The actuary should consider the relevant characteristics of the entity's exposures to the extent that they are likely to have a material effect on the results of the actuary's reserve evaluation. These characteristics may be influenced by the methods used to sell or provide coverages, the distribution channels from which the entity's business is obtained, the general underwriting practices and pricing philosophy of the entity, and the marketing objectives and strategies of the entity.

If the actuary makes use of other personnel within the actuary's control to carry out assignments relative to analyses supporting the opinion, the actuary should review their contributions and be satisfied that those contributions are reasonable.

The actuary may develop estimates of the unpaid claims for all or a portion of the reserve or make use of another's unpaid claims estimate analysis or opinion for all or a portion of the reserve. For purposes of this section, "another" refers to one not within the actuary's control.

3.7.1 Evaluation Based on Actuary's Unpaid Claim Estimates—When developing unpaid claim estimates to evaluate the reasonableness of a reserve, the actuary may develop a point estimate, a range of estimates, or both. The actuary should be guided by ASOP No. 43 for the development of these unpaid claim estimates.

3.7.2 Evaluation Based on Actuary's Use of Another's Unpaid Claims Estimate Analysis or Opinion—In the course of conducting a reserve evaluation, the actuary may make use of another's supporting analyses or opinions. The actuary should understand the intended purpose of the analyses or opinions, and assess whether the analyses or opinions are consistent with the stated basis of presentation of the reserves. (See section 4.2(f) for related disclosure requirements.)

The actuary should only make use of another's analyses or opinions when, in the actuary's professional judgment, it is reasonable to do so. In making this determination, the actuary should consider the following:

a. the amount of the reserves covered by another's analyses or opinions in comparison to the total reserves subject to the actuary's opinion;

b. the nature of the exposure and coverage;

c. the way in which reasonably likely variations in estimates covered by another's analyses or opinions may affect the actuary's opinion on the total reserves subject to the actuary's opinion; and

d. the credentials of the individual(s) that prepared the analyses or opinions.

Where, in the opinion of the actuary, the analyses or opinions of another need to be modified or expanded, the actuary should perform such analyses as necessary to issue an opinion on the total reserves.

If in using the analyses or opinions of another the actuary reaches conclusions materially different from those in the analyses or opinions used, the actuary should, when practical, contact the appropriate parties to discuss the differences. Where material differences exist, the issues underlying the differences should be understood by the actuary. Materiality in this situation should be measured relative to the actuary's opinion, not relative to the analyses or opinions used.

3.8 Prior Opinion—If the actuary prepared the most recent prior opinion, or if the actuary is able to review the prior opining actuary's work, then the actuary should determine whether the current assumptions, procedures, or methods differ from those employed in providing the most recent prior opinion prepared in accordance with this standard. If the current assumptions, procedures, or methods differ from those employed in the prior opinion, the actuary should consider whether the changes are likely to have had a material effect on the actuary's unpaid claim estimate. (See section 4.2(a) for related disclosure requirements.)

The use of assumptions, procedures, or methods for new reserve segments (for example, line of business or accident year) that differ from those used previously is not a change in assumptions, procedures, or methods within the meaning of this section. Similarly, when

the determination of the reasonableness of reserves is based on the periodic updating of experience data, factors, or weights, such periodic updating is not a change in assumptions, procedures, or methods within the meaning of this section.

3.9 Adverse Deviation—The actuary should consider whether there are significant risks and uncertainties that could result in future paid amounts being materially greater than those provided for in the reserves. (See section 4.2(e) for related disclosure requirements.)

When the actuary's analysis derives separate reserve estimates for various segments or claim groupings, the actuary should consider the combined risks and uncertainties associated with the reserves that are the subject of the opinion.

3.10 Collectibility of Ceded Reinsurance—If the scope of the statement of actuarial opinion includes reserves net of ceded reinsurance and the amount of ceded reinsurance is material, the actuary should consider the collectibility of ceded reinsurance in evaluating net reserves. The actuary should solicit information from management regarding collectibility problems, significant disputes with reinsurers, and practices regarding provisions for uncollectible reinsurance. The actuary's consideration of collectibility does not imply an opinion on the financial condition of any reinsurer.

3.11 Statements of Actuarial Opinion—An actuary who is issuing a statement of actuarial opinion cannot claim reliance on another's work or opinion except as described in section 3.7.2. The statement of actuarial opinion should be one of the following types:

a. Determination of Reasonable Provision—The actuary should opine that the reserve amount makes a reasonable provision for the liabilities associated with the specified reserve when the reserve is found to be reasonable. (See section 3.7).

b. Determination of Deficient or Inadequate Provision—The actuary should opine that the reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves when the reserve amount is less than the minimum amount that the actuary believes is reasonable. Furthermore, the actuary should determine the minimum amount that the actuary believes is reasonable. (See section 4.2(b) for related disclosure requirements.)

c. Determination of Redundant or Excessive Provision—The actuary should opine that the reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves when the reserve amount is greater than the maximum amount that the actuary believes is reasonable. Furthermore, the actuary should determine the maximum amount that the actuary believes is reasonable. (See section 4.2(c) for related disclosure requirements.)

d. Qualified Opinion—The actuary should issue a qualified statement of actuarial opinion when, in the actuary's opinion, the reserves for a certain item or items within the scope of the opinion are in question because they cannot be reasonably estimated or the actuary is unable to issue an opinion on the reserves for those items. The actuary should determine whether the reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item or items to which the qualification relates. (See section 4.2(d) for related disclosure requirements.) The actuary is not required to issue a qualified opinion if the actuary reasonably believes that the item or items in question are not likely to be material.

e. No Opinion—The actuary's ability to give an opinion is dependent upon data, analyses, assumptions, and related information that are sufficient to support a conclusion. If the actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the actuary should either issue a statement of no opinion or choose not to issue any opinion at all. A statement of no opinion should include a description of the reasons no opinion could be given.

3.12 Adequacy of Assets Supporting Reserves—This standard does not obligate the actuary to undertake an evaluation of the adequacy of the assets supporting the stated reserve amount except as may be needed to comply with any applicable law, regulatory requirement, or other ASOP.

3.13 Documentation—The actuary should consider the intended purpose of the statement of actuarial opinion when documenting work, and should refer to ASOP No. 41, *Actuarial Communications*. When the statement is provided to meet regulatory requirements, the actuary should follow the detailed requirements specified by regulators as to the form and content of supporting reports and other documentation.

Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing a statement of actuarial opinion subject to this standard, the actuary should consider the intended purpose of the statement of actuarial opinion and be guided by ASOP No. 41.

In addition, consistent with the intended purpose, the actuary should disclose the following in the statement of actuarial opinion:

a. the words "statement of actuarial opinion," or alternative words with similar meaning if required by law or regulation governing the opinion, in the title of the written opinion;

b. the intended user(s) of the statement of actuarial opinion;

c. the intended purpose of the statement of actuarial opinion, as described in section 3.2;

d. the reserves being opined upon, as described in section 3.3;

e. the stated basis of reserve presentation, as described in section 3.4. In certain circumstances, referring to specific financial statement reserve figures and their specific source (for example, Statutory Annual Statement of Company ABC as filed with the Company's state of domicile) would satisfy disclosures related to section 3.4;

f. the scope of the analysis underlying the statement of actuarial opinion, as described in sections 3.5(b) and 3.5(c), and the review date (see section 3.5(a)) if different from the date the opinion is signed;

g. the type of opinion, as described in section 3.11;

h. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

i. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

j. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Additional Disclosures—In certain cases, consistent with the intended purpose, the actuary may need to make the following disclosures in addition to those in section 4.1:

a. The actuary should disclose the nature of changes in assumptions, procedures, or methods from those employed in the most recent prior opinion prepared in accordance with this standard, unless the actuary concludes the changes are not likely to have a material effect on the actuary's unpaid claim estimate. This standard does not require the actuary to quantify the impact of such changes. If the actuary is not able to review the prior opining actuary's work, then the actuary should disclose that the prior assumptions, procedures and methods are unknown. (See section 3.8.)

b. If the actuary determines that the reserve amount is deficient or inadequate, the actuary should disclose the minimum amount that the actuary believes is reasonable.

c. If the actuary determines that the reserve amount is redundant or excessive, the actuary should disclose the maximum amount that the actuary believes is reasonable.

d. If the actuary issues a qualified opinion, the actuary should disclose in the opinion the item or items to which the qualification relates, the reasons for the qualification, and the amounts for such items, if disclosed by the entity, that are included in the reserve. If the amounts for such items are not disclosed by the entity, the actuary should disclose that the reserve includes unknown amounts for such items. The actuary should also disclose whether the reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item or items to which the qualification relates.

e. If the actuary reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation, an explanatory paragraph should be included in the statement of actuarial opinion. (See sections 3.6 and 3.9 for guidance on evaluating materiality and adverse deviation.) The explanatory paragraph should contain the amount of adverse deviation that the actuary judges to be material with respect to the statement of actuarial opinion, and a description of the major factors or particular conditions underlying risks and uncertainties that the actuary believes could result in material adverse deviation.

The actuary is not required to include in the explanatory paragraph general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the actuary required to include an exhaustive list of all potential sources of risks and uncertainties.

f. If the actuary makes use of an analysis or opinion of another not within the actuary's control for a material portion of the reserves, the actuary should disclose whether the actuary reviewed the others' underlying analysis. If a review was conducted, the actuary should disclose the extent of the review including items such as the methods and assumptions used and the underlying arithmetic calculations.

g. If the statement of actuarial opinion relies on present values and if the actuary believes that such reliance is likely to have a material effect on the results of the actuary's reserve evaluation, the actuary should disclose that present values were used in forming the opinion, the interest rate(s) used by the actuary, and the monetary amount of discount that was reflected in the reserve amount.

h. If the reserves being opined upon are net of ceded reinsurance and the amount of ceded reinsurance is material, the actuary should comment on the collectibility of that reinsurance. This standard does not require the actuary to quantify the collectibility. (See section 3.10.)

i. When the statement is provided to meet regulatory requirements, the actuary should follow the detailed requirements specified by regulators as to the form and content of the required disclosures, to the extent not addressed above.

Appendix 1
Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

In 2000, the ASB issued ASOP No. 36, *Statements of Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*. At that time, there was no standard of practice concerning the underlying actuarial analyses. Guidance was provided in the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* adopted by the Board of Directors of the Casualty Actuarial Society in May 1988.

Since the issuance of ASOP No. 36, the ASB has issued ASOP No. 43, *Property/Casualty Unpaid Claim Estimates* in 2007. ASOP No. 43 provides guidance to actuaries concerning the actuarial analyses typically underlying the opinions subject to ASOP No. 36. Certain material is duplicated in these two ASOPs. This revision eliminates the duplications and brings consistency in language with ASOP No. 43.

Current Practices

Actuaries are guided by ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*. Other ASOPs issued by the Actuarial Standards Board pertaining to unpaid loss and loss adjustment expense estimates include ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 23, *Data Quality*; and ASOP No. 41, *Actuarial Communications.* Guidance is also provided by the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* of the Casualty Actuarial Society, which is currently under review.

In addition, since 1993, the Casualty Practice Council of the American Academy of Actuaries has published practice notes addressing current National Association of Insurance Commissioners' requirements for the statement of actuarial opinion required for the Statutory Annual Statement. The practice notes describe some current practices and show illustrative wording for handling issues and problems. While these practice notes (and future practice notes issued after the effective date of this standard) can be updated to react in a timely manner to new concerns or requirements, they are not binding, and they have not gone through the exposure and adoption process of the standards of practice promulgated by the Actuarial Standards Board.

Numerous educational papers are in the public domain that are relevant to the topic of reserves and reserve evaluations, including those published by the Casualty Actuarial Society. While these may provide useful educational guidance to practicing actuaries, these are not actuarial standards and are not binding.

Appendix 2

Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, was issued in March 2010 with a comment deadline of June 30, 2010. Six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Subcommittee on Reserving carefully considered all comments received, and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this final version.

GENERAL COMMENTS	
Comment	One commentator thought the use of the word "loss" was confusing and recommended it be eliminated from the standard and replaced by "claim" with a note that the term "loss" is often used in practice.
Response	The reviewers retained the references to "loss reserves" as in the title of the standard, as such use is common and understood. The definition of "loss" states that it is also known as "claim amount."
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested the scope be changed to include the actuarial opinion summary and supporting reports.
Response	The reviewers disagree and made no change. The actuarial opinion summary and supporting reports are subject to ASOP Nos. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*; 41, *Actuarial Communications*; and 43, *Property/Casualty Unpaid Claim Estimates;* but 36 is intended to apply solely to the statement of actuarial opinion.
SECTION 2. DEFINITIONS	
Section 2.1, Accounting Date	
Comment	One commentator felt the reference to "as of" date was unclear.
Response	The reviewers think the reference helps clarify the definition for some and have left it unchanged.
Comment	One commentator suggested deleting the phrase "as paid."
Response	The reviewers modified the definition to refer to both "paid" and "unpaid."
Comment	One commentator suggested changing to "the date on which an accounting period ends"
Response	The reviewers do not believe this adds clarity and made no change.

2.6, Loss Adjustment Expense	
Comment	One commentator thought this definition should be clarified as to whether it includes both unallocated and allocated claim adjustment expenses, thinking the language of the definition implies only "allocated" (i.e., "defense and cost containment" in Annual Statement vernacular) because it leaves out "adjusting and other" (Annual Statement vernacular for unallocated) as examples of types of costs.
Response	The reviewers note the definition does include "administration" and "determining coverage for" which would be Adjusting and Other expenses. Thus, no change was made to the definition.
Section 2.13, Valuation Date	
Comment	One commentator suggested changing to "the date as of which the actuary's estimate applies to the opinion."
Response	The reviewers disagree with this definition, as it is possible for a valuation date to differ from the date at which the estimate applies. For example, if an actuary used data through December 31, 2008 to opine on the reasonableness of a reserve booked at December 31, 2007, the valuation date in this case would be December 31, 2008, while the accounting date would be December 31, 2007.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Comment	Two commentators suggested the removal of the section on Risk Transfer Requirements be mentioned in the transmittal memorandum.
Response	The reviewers do not believe this is necessary and made no change. The reason for its removal, as noted in the appendix of the second exposure draft, was that the reviewers decided this is an accounting issue outside the scope of this ASOP. The deletion of this section does not in any way imply the actuary is obligated to opine that the reserves are established in accordance with regulatory or accounting requirements regarding risk transfer in reinsurance contracts.
Section 3.3, Reserves Being Opined On	
Comment	One commentator questioned the need to identify the reserve amount and accounting date, stating they should be simply disclosed. The commentator further noted the accounting date is not mentioned in the disclosures.
Response	The reviewers note it is reasonable to first identify something before disclosing it. Furthermore, the reviewers note the disclosure in 4.1(d) does include both the reserve amount and the accounting date.
Comment	One commentator suggested changing language to state "if there are specific accounting standards applicable to the stated basis (per section 3.4) of the reserves (for example, US SAP, US GAAP, IFRS, etc.), then the actuary should reflect such stated basis in developing their opinion."
Response	The reviewers have modified the language by adding the words "if relevant."
Section 3.4, Stated Basis of Reserve Presentation	
Comment	One commentator suggested the last word in this section be changed from "reserve evaluation" to "opinion."
Response	The reviewers believe "reserve evaluation" is appropriate.

Section 3.5, Scope of the Analysis Underlying the Statement of Actuarial Opinion	
Comment	One commentator suggested revising section 3.5(a) to read "the review date of the actuary's unpaid claim estimate analysis…."
Response	The reviewers disagree, as it is the review date of the opinion that should be disclosed in the opinion, which may differ from the review date of an underlying unpaid claim estimate analysis. The language in section 3.5 and the definition in section 2.10 were modified to clarify this.
Section 3.7, Reserve Evaluation	
Comment	One commentator suggested changing the word "producers" in section 3.7.2 to "authors."
Response	The reviewers decided to change the word to "appropriate parties."
Comment	One commentator stated the second paragraph of this section was educational in nature and therefore inappropriate for a standard of practice.
Response	While the reviewers agree the second sentence of that paragraph is partly educational, the reviewers believe it adds clarity and have retained it.
Comment	One commentator suggested that the paragraph beginning, "If the actuary makes use of other personnel within..." be moved to section 3.7.1., as the commentator believes an actuary making use of other personnel within the actuary's control to carry out assignments is essentially developing his/her own estimates, so section 3.7.2 would not apply.
Response	The reviewers did not make the change, as it is possible for an actuary to make use of personnel within the actuary's control in the process of making use of another's analysis or opinion per section 3.7.2.
Comment	Multiple commentators disagreed with the removal of the references to "review opinion" and suggested changes to allow for a more limited review in certain cases.
Response	The reviewers disagreed, believing that all opinions subject to the standard should be held to the same requirements. The reviewers note that when conducting a "review opinion" the actuary may decide to make use of data accumulations, methods, assumptions and calculations performed by another actuary, so long as, in the actuary's professional judgment, it is reasonable to do so, as discussed in section 3.7.2. Additional language was added to section 4.2(f) regarding the disclosure of the extent of the actuary's review of the underlying analysis.
Comment	Some commentators thought the final sentence in the first paragraph of section 3.7.2 was long and could be clarified.
Response	The reviewers edited this sentence, using an outline form, to clarify.
Comment	Some commentators thought the actuary should be required to disclose issues underlying material differences between the actuary's conclusions and those of an actuary whose work is reviewed.
Response	The reviewers do not believe such disclosure is relevant to the opinion on the reserves.
Comment	One commentator suggested adding language stating the actuary should consider the reasonableness of the unpaid claims estimate.
Response	The reviewers note this is not necessary, as the standard refers to ASOP No. 43, and ASOP No. 43 addresses the topic of reasonableness.
Section 3.8 , Prior Opinion	
Comment	One commentator suggested adding a reference to section 4.2(a).
Response	The reviewers agreed and made the addition.

Section 3.10, Collectibility of Ceded Reinsurance	
Comment	One commentator suggested adding a sentence, "This standard does not obligate the actuary to quantify uncollectible reinsurance recoveries in cases where the applicable accounting standard does not require it."
Response	The reviewers believe the instruction to "consider" to be appropriate, and did not make any change.
Section 3.11, Statements of Actuarial Opinion	
Comment	One commentator suggested switching the order of the last two sentences in section 3.11(d).
Response	The reviewers agreed and made the change.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1, Actuarial Communication	
Comment	One commentator thought the requirement of identifying the intended user of the SAO should be removed, stating they are generally addressed to and paid for by the Board of Directors but there is also clearly an intended use for regulators, and that this is confusing and will lead to criticisms about independence and conflicts of interest.
Response	The reviewers disagree with the suggested change, as the disclosure should add clarity. An example of intended users has been added to section 3.2.
Comment	Some commentators suggested expanding 4.1(f) to include disclosure of the valuation date. One commentator believed this would help provide clarity when an unpaid claim estimate analysis is performed prior to the accounting date with a subsequent roll-forward to the accounting date.
Response	The reviewers believe this disclosure is more appropriate in the underlying report than in the opinion, and have deleted the reference to valuation date in section 3.5. The preparation of the underlying report is covered by ASOP No. 43, which states the actuary should disclose the valuation date.
Comment	One commentator suggested that the requirement in section 4.1(h) of the second exposure draft to make a statement to the effect that the actuary does not reasonably believe that there are significant risks and uncertainties that could result in material adverse deviation is inappropriate. The commentator indicated that while this is the current standard for US statutory statements of actuarial opinions, extending this requirement to other opinions could lead to instances of misinterpretation by less sophisticated audiences, especially in cases where the perception of materiality could differ among the various audiences (for example, a state workers' compensation loss certification for a self-insured employer).
Response	The reviewers agreed and have deleted section 4.1(h) and modified section 4.2(e). The reviewers note that for US statutory statements of actuarial opinion, the actuary would still be required to make such disclosures per the NAIC annual statement instructions.
Comment	One commentator stated the disclosure requirements in section 4.1(e) were burdensome and inappropriate for an opinion.
Response	The reviewers do not believe the requirement to be burdensome, as in many cases it could be satisfied through referring to specific items in financial statements. The standard does not require an exhaustive list of disclosures as suggested by the commentator.
Comment	Two commentators noted the references to ASOP No. 41 correspond to an exposure draft rather than the standard in place.
Response	This final version refers to the final version of ASOP No. 41 effective April 1, 2011.

Section 4.2, Additional Disclosures	
Comment	One commentator suggested editing section 4.2(a) to read, "If the actuary is not able to review the prior opining actuary's work…."
Response	The reviewers agreed and made the change.
Comment	One commentator suggested limiting the disclosure in section 4.2(e) to only those cases where the material adverse deviation would be within the actuary's range of unpaid claim estimates.
Response	The reviewers did not make this change. First, the reviewers believe material adverse deviation that goes beyond the actuary's range of unpaid claim estimates can be a very useful thing to disclose. The range of reasonably possible outcomes is generally much wider than the range of reasonable unpaid claim estimates, and to the extent there are significant risks and uncertainties that could lead to an outcome that would result in a material adverse deviation, it is useful to disclose such information, even if such outcomes are outside the actuary's range of estimates. Second, there is no requirement for an actuary to determine a range of unpaid claim estimates, which would be needed in order to modify the standard as the commentator suggested. The commentator used the phrase "significant risk of material adverse deviation." The reviewers note the language in the standard is "significant risks and uncertainties that could result in a material adverse deviation," not "significant risk of material adverse deviation."

ACTUARIAL STANDARDS BOARD

Actuarial Standard
of Practice
No. 41

Actuarial Communications

Revised Edition

Developed by the
General Committee of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
December 2010

(Doc. No. 120)

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APPENDIXES

December 2010

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Actuarial Communications

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 41

This document contains the final version of the revision of ASOP No. 41, *Actuarial Communications*.

Background

The current version of ASOP No. 41 has been in effect for eight years, and applies to all U.S. actuaries in all areas of practice. During that time, the ASB has received comments regarding a lack of clarity in the document and confusion in respect to its wording and structural arrangement. One of the ASB's priorities is to make sure that all ASOPs are clear and unambiguous.

First Exposure Draft

In September 2008, the ASB approved the first exposure draft of a revised ASOP No. 41 with a comment deadline of December 31, 2008. Twenty-three comment letters were received. Most had multiple comments, many of which were substantive. The majority of commentators were supportive of the effort to revise this ASOP, and most comments were positive in nature, but some indicated that the first draft needed significant revision.

In September 2008, the ASB also adopted "Revision of Deviation Language for Standards and Removal of References to PSAOs from Standards" pending the issuance of ASOP No. 41 as a final revision. Due to the passage of time since that adoption, the ASB will update this document to reflect changes in ASOP No. 41, as well as to update references for other new and revised ASOPs. It is expected that the ASB will adopt this document as a final revision at its March meeting, with an effective date of May 1, 2011, consistent with the effective date of this revised standard.

Second Exposure Draft

In December 2009, the ASB approved a second exposure draft of a revised ASOP No. 41, reflecting significant modifications of the first draft, with a comment deadline of March 31, 2010. Thirty-seven comment letters were received in response. For a summary of the substantive issues contained in the second exposure draft comment letters and the responses, please see appendix 2.

Changes from Second Exposure Draft

The review and revision of the second exposure draft focused on the dominant issue raised in 19 of 37 comment letters; namely, the apparent requirement for an actuary to complete an actuarial report with full disclosures in nearly all circumstances. This was not the intent of the second exposure draft, but the reviewers were sensitive to this possible interpretation. Accordingly, this final version reflects clarification to the guidance within this standard, in particular to recognize that in some internal and informal settings, complete disclosure of all applicable supporting information is neither practical nor necessary. Section 3.3 (formerly section 3.5) has been moved and expanded to provide guidance in these situations. Additional discussion has also been added to appendix 1.

In response to other comments some definitions have been added and other clarifying modifications have been made.

Summary of Key Changes from Current ASOP

1. The concept of a single formal actuarial report, which is required to contain all necessary disclosures, has been removed. Instead, the concept that communication is an ongoing and interactive process and that an actuarial report with all necessary disclosure elements may comprise several different pieces of communication, perhaps delivered in different forms, has been adopted. The standard directs the actuary to identify all applicable documents whenever multiple documents are used to satisfy all of the disclosure requirements of an actuarial report.

2. Section 3.4.4 makes it clear that the actuary is responsible for all actuarial assumptions and methods utilized in producing the actuarial communication, unless the actuary discloses otherwise.

3. Section 3 has been reorganized. All disclosure requirements have been moved to section 4, while additional guidance relating to disclosures remains in section 3.4.

4. The treatment of deviations from the guidance of any ASOP (including situations where assumptions are not set by the actuary) is also codified in section 4.

5. Reference to Prescribed Statements of Actuarial Opinion (PSAOs) has been removed.

6. The ASB has decided that specifying what material should be retained and for how long is not appropriate for this standard (except as may be provided in section 3.8).

The General Committee thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in December 2010 to adopt this standard.

The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.

ACTUARIAL STANDARD OF PRACTICE NO. 41

ACTUARIAL COMMUNICATIONS

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries with respect to actuarial communications.

1.2 Scope—This standard applies to actuaries issuing actuarial communications within any practice area. This standard does not apply to communications that do not include an actuarial opinion or other actuarial findings (for example, this standard does not apply to brochures, fee quotes, or invoices).

This standard provides guidance for preparing actuarial communications, including those that may be required by the *Qualification Standards* or by other ASOPs. If such other guidance contains communication requirements that are additional to or inconsistent with this standard, the requirements of such other guidance supersede the guidance of this ASOP. However, the guidance in this ASOP applies to the extent it is not inconsistent with such other guidance.

Law, regulation, or another profession's standards may prescribe the form and content of a particular actuarial communication (such as a government form). In such situations, the actuary should comply with the guidance in this standard to the extent not prohibited by applicable law, regulation, or standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason, the actuary should refer to section 4 regarding deviation.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for actuarial communications issued on or after May 1, 2011.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Communication—A written, electronic, or oral communication issued by an actuary with respect to actuarial services.

2.2 Actuarial Document—An actuarial communication in any recorded form (such as paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts). Notes taken by someone other than the actuary are not considered actuarial documents.

2.3 Actuarial Finding—The result (including advice, recommendations, opinions, or commentary on another actuary's work) of actuarial services.

2.4 Actuarial Report—The set of actuarial documents that the actuary determines to be relevant to specific actuarial findings that is available to an intended user.

2.5 Actuarial Services—Professional services provided to a principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings, or opinions based upon actuarial considerations.

2.6 Deviation—The act of departing from the guidance of an ASOP.

2.7 Intended User—Any person who the actuary identifies as able to rely on the actuarial findings.

2.8 Oral Communication—An actuarial communication made orally that has not, to the knowledge of the actuary, been recorded or transcribed verbatim. Such an oral communication is an actuarial communication, but is not an actuarial document.

2.9 Other User—Any recipient of an actuarial communication who is not an intended user.

2.10 Principal—A client or employer of the actuary.

Section 3. Analysis of Issues and Recommended Practices

3.1 Requirements for Actuarial Communications—The performance of a specific actuarial engagement or assignment typically requires significant and ongoing communications between the actuary and the intended users regarding the following: the scope of the requested work; the methods, procedures, assumptions, data, and other information required to complete the work; and the development of the communication of the actuarial findings.

3.1.1 Form and Content—The actuary should take appropriate steps to ensure that the form and content of each actuarial communication are appropriate to the particular circumstances, taking into account the intended users.

3.1.2 Clarity—The actuary should take appropriate steps to ensure that each actuarial communication is clear and uses language appropriate to the particular circumstances, taking into account the intended users.

3.1.3 Timing of Communication—The actuary should issue each actuarial communication within a reasonable time period, unless other arrangements as to timing have been made. In setting the timing of the communication, the needs of the intended users should be considered.

3.1.4 Identification of Responsible Actuary—An actuarial communication should clearly identify the actuary responsible for it. When two or more individuals jointly issue a communication (at least some of which is actuarial in nature), the communication should identify all responsible actuaries, unless the actuaries judge it inappropriate to do so. The name of an organization with which each actuary is affiliated also may be included in the communication, but the actuary's responsibilities are not affected by such identification. Unless the actuary judges it inappropriate, the actuary issuing an actuarial communication should also indicate the extent to which the actuary is available to provide supplementary information and explanation.

3.2 Actuarial Report—The actuary should complete an actuarial report if the actuary intends the actuarial findings to be relied upon by any intended user. The actuary should consider the needs of the intended user in communicating the actuarial findings in the actuarial report.

An actuarial report may comprise one or several documents. The report may be in several different formats (such as formal documents produced on word processing, presentation or publishing software, e-mail, paper, or web sites). Where an actuarial report for a specific intended user comprises multiple documents, the actuary should communicate which documents comprise the report.

In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary with sufficient clarity

that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report.

3.3 Specific Circumstances—The content of an actuarial report may be constrained by circumstances. The actuary should follow the guidance of this standard to the extent reasonably possible within such constraints. When those constraints exist, it may be appropriate not to include some of the otherwise required content in the actuarial report. However, limiting the content of an actuarial report may not be appropriate if that report or the findings in that report may receive broad distribution.

If the actuary believes circumstances are such that including certain content is not necessary or appropriate, the actuary must be prepared to identify such circumstances and justify limiting the content of the actuarial report.

3.4 Disclosures Within an Actuarial Report—Consideration of the items to be disclosed is an important part of the preparation of any actuarial communication. The actuary should review the list of required disclosure items included in section 4 of this ASOP, and in any other relevant ASOP. Further discussion regarding some of these disclosure items follows:

3.4.1 Uncertainty or Risk—The actuary should consider what cautions regarding possible uncertainty or risk in any results should be included in the actuarial report.

3.4.2 Conflict of Interest—An actuary who is not financially, organizationally, or otherwise independent concerning any matter related to the subject of an actuarial communication should disclose any pertinent information that is not apparent. This includes any situation where the actuary acts, or may appear to be acting, as an advocate. However, applicable financial disclosure is limited in accordance with Precept 6 of the *Code of Professional Conduct* to sources of material compensation that are known to, or are reasonably ascertainable by, the actuary.

3.4.3 Reliance on Other Sources for Data and Other Information—An actuary who makes an actuarial communication assumes responsibility for it, except to the extent the actuary disclaims responsibility by stating reliance on other sources. Reliance on other sources for data and other information means making use of those sources without assuming responsibility for them. An actuarial communication making use of any such reliance should define the extent of reliance, for example by stating whether or not checks as to reasonableness have been applied. An actuary may rely upon other sources for information, except where limited or prohibited by applicable standards of practice or law or regulation. Further guidance on when such reliance is appropriate, and what the actuary's responsibilities are when such reliance is stated, is found in ASOP No.23, *Data Quality*.

3.4.4 Responsibility for Assumptions and Methods—An actuarial communication

should identify the party responsible for each material assumption and method. Where the communication is silent about such responsibility, the actuary who issued the communication will be assumed to have taken responsibility for that assumption or method. The actuary's obligation when identifying the other party who selected the assumption or method depends upon how the assumption or method was selected.

a. If the assumption or method is specified by applicable law (statutes, regulations, and other legally binding authority), the actuary should include the disclosures identified in section 4.2. These disclosures should be made whether or not the actuary believes the assumption or method is reasonable for the purpose of the communication. The actuary should also follow the guidance in paragraph (b) below whenever required by another ASOP.

b. If a material assumption or method is selected by another party, the actuary has three choices:

   1. If the assumption or method does not conflict significantly with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment, the actuary has no disclosure obligation;

   2. If the assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment, the actuary must disclose that fact and the additional information specified in section 4.3; and

   3. If the actuary has been unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, or if the actuary was not qualified to judge the reasonableness of the assumption, the actuary should disclose that fact as specified in section 4.3.

c. In all other situations, the actuary is responsible for all assumptions and methods utilized in the preparation of a communication unless the actuary discloses otherwise within the communication by including the disclosures identified in section 4.4.

3.4.5 Information Date of Report—The actuary should communicate to the intended user the date(s) through which data or other information has been considered in developing the findings included in the report.

3.4.6 Subsequent Events—The actuary should disclose any relevant event that meets the following conditions:

a. it becomes known to the actuary after the latest information date described in section 3.4.5;

b. it becomes known to the actuary before the report is issued;

c. it may have a material effect on the actuarial findings if it were reflected in the actuarial findings; and

d. it is impractical to revise the report before it is issued.

If the actuary learns of changes to data or other information (on or before the information date) after some findings have been communicated, but before the report is completed, the actuary should communicate those changes, and their implications, to any intended user to whom the actuary has communicated findings.

3.5 Explanation of Material Differences—If a later actuarial communication produced by the same actuary, which opines on the same issue, includes materially different results or expresses a different opinion from the former communication, then the later communication should make it clear that the earlier results or opinion are no longer valid and explain why they have changed. If the later communication is oral, the actuary should follow-up with a document that clarifies the reason(s) for the changes.

3.6 Oral Communications—When the actuary is providing an oral communication, the actuary should consider the extent to which (if any) the disclosures listed under section 3.4 should be included in the oral communication and include each such disclosure if appropriate in the particular circumstances. Where the actuary has a concern that the oral communication may be passed on to other parties, the actuary should consider following up with an actuarial document.

3.7 Responsibility to Other Users—An actuarial document may be used in a way that may influence persons who are not intended users. The actuary should recognize the risks of misquotation, misinterpretation, or other misuse of such a document and should take reasonable steps to ensure that the actuarial document is clear and presented fairly. To help prevent misuse, the actuary may include language in the actuarial document that limits its distribution to other users (for example, by stating that it may only be provided to such parties in its entirety or only with the actuary's consent).

Nothing in this standard creates an obligation for the actuary to communicate with any person other than the intended users.

3.8 Retention of Other Materials—An actuary may choose to keep file material other than that which is to be disclosed under this ASOP. Nothing in this ASOP requires the actuary to disclose such additional materials to any party.

If, as may be appropriate in accordance with section 3.3., a report does not include all of the supporting information identified in this ASOP, the actuary should consider retaining the supporting information that was not included in the report. The actuary is not required to create additional documentation for this purpose.

An actuary should consider retaining sufficient information for any recurring project so that another actuary could assume the assignment.

Section 4. Communications and Disclosures

4.1 Disclosures in any Actuarial Communication—Disclosures in any actuarial communication should include the following:

4.1.1 Identification of Responsible Actuary—Any actuarial communication should identify the actuary who is responsible for the actuarial communication (see section 3.1.4).

4.1.2 Identification of Actuarial Documents—Any actuarial document should include the date and subject of the document with any additional modifier (such as "version 2" or time of day) to make this entire description unique.

4.1.3 Disclosures in Actuarial Reports—In addition to the information necessary to satisfy section 3.2, any actuarial report should disclose the following information, unless the actuary determines that it is inappropriate to do so (see section 3.3):

a. the intended users of the actuarial report;

b. the scope and intended purpose of the engagement or assignment;

c. the acknowledgement of qualification as specified in the *Qualification Standards*;

d. any cautions about risk and uncertainty (see section 3.4.1);

e. any limitations or constraints on the use or applicability of the actuarial findings contained within the actuarial communication including, if appropriate, a statement that the communication should not be relied upon for any other purpose;

f. any conflict of interest as described in section 3.4.2;

g. any information on which the actuary relied that has a material impact on the actuarial findings and for which the actuary does not assume responsibility (see section 3.4.3);

h. the information date as described in section 3.4.5;

i. subsequent event(s) (if any) as described in section 3.4.6.; and

j. if appropriate, the documents comprising the actuarial report.

Note that other ASOPs that apply to a particular assignment may have additional disclosure requirements that should also be followed.

4.2 Certain Assumptions or Methods Prescribed by Law—Where any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority), the actuary should disclose the following in the actuarial report:

a. the applicable law under which the report was prepared;

b. the assumptions or methods that are prescribed by the applicable law; and

c. that the report was prepared in accordance with the applicable law.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.3 Responsibility for Assumptions and Methods—In any situation not covered under section 4.2, where the actuary states reliance on other sources (as described in section 3.4.4(b) 2 and 3) and thereby disclaims responsibility for any material assumption or method, the actuary should disclose the following in the actuarial report, unless it is inappropriate to do so (see section 3.3):

a. the assumption or method that was set by another party;

b. the party who set the assumption or method;

c. the reason that this party, rather than the actuary, has set the assumption or method; and

d. either

1. that the assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment; or

2. that the actuary was unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, and did not do so, or that the actuary

was not qualified to judge the reasonableness of the assumption.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.4 Deviation from the Guidance of an ASOP—If, in the actuary's professional judgment, the actuary has deviated materially from the guidance set forth in an applicable ASOP, other than as covered under sections 4.2 or 4.3 of this standard, the actuary can still comply with that ASOP by providing an appropriate statement in the actuarial communication with respect to the nature, rationale, and effect of such deviation.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes, but is not part of the standard of practice.

Background

The current version of ASOP No. 41, adopted in March 2002, was adapted from and superseded Interpretative Opinion No. 3, *Professional Communications of Actuaries*. Interpretive Opinion No. 3 was itself adopted by the American Academy of Actuaries in 1981. The 2002 version of ASOP No. 41 conformed to the format adopted by the Actuarial Standards Board in May 1996 for all actuarial standards of practice, and while this standard generally followed Interpretative Opinion No. 3, it also expanded upon, clarified, and eliminated portions of that opinion.

This standard offers guidance to complement the requirements imposed by the *Code of Professional Conduct*. It was drafted and is still intended to help actuaries apply the *Code of Professional Conduct* when making professional communications (by written, electronic, or oral means) to clients, employers, regulators, policyholders, plan participants, investors, and other users of actuarial services. Actuaries commonly deal with confidential or proprietary information. The *Code of Professional Conduct* clearly precludes the actuary from disclosing this type of information to inappropriate parties.

This revision has used definitions that are consistent with those found in the *Code of Professional Conduct* and in the recently revised *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinions*. This revision also incorporates language in section 4 that is the foundation of the ASB's new approach to creating consistency in the treatment of deviation language within all ASOPs.

It should be noted that all recorded forms of communication (including—but not limited to—paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts) could be considered records of such communications and may be, therefore, discoverable in legal proceedings.

Current Practices

Actuaries are currently guided by the *Code of Professional Conduct*, by ASOP No. 41, and by other actuarial standards of practice, depending on the nature of the work at hand.

In general, actuarial communications are provided in order to answer questions or address specific needs of one or more intended users. Actuarial communications may be made available to a variety of users of actuarial work products including clients, employers, regulators, policyholders, plan participants, and investors, as well as external audiences such as the general public. Actuarial communications may be delivered in many forms, including written, electronic,

or oral; and may stand alone or be part of a broader pattern of communication. While preparing an actuarial communication, an actuary should be mindful of the needs and concerns of each of the intended users. In certain situations, some intended users may receive different actuarial documents. Thus, an actuarial report for one intended user may differ from the report for a different intended user. Even the least comprehensive version of an actuarial report is subject to the guidance of this standard.

An actuary, while functioning in a professional capacity, may be involved in informal communication with others. Actuarial findings may be communicated under circumstances that make inclusion of all supporting information impractical or unnecessary. This may be particularly common in a company environment. Other circumstances such as severe time constraints (for example, union negotiations, mergers and acquisitions) may make inclusion of all recommended disclosure items impractical, if not impossible. In these instances, the content of the actuarial report is often limited. These situations are addressed in section 3.3.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Actuarial Communications*, was issued in December 2009 with a comment deadline of March 31, 2010. Thirty-seven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The General Committee carefully considered all comments received, reviewed the exposure draft and proposed changes. The ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the General Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	Several commentators raised the issue of a potential deficiency in guidance should the proposed ASOP No. 41 be adopted as final at the same time current ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, is withdrawn.
Response	The reviewers do not believe that this issue can or should be resolved within ASOP No. 41.
Comment	One commentator believed that the distinction between the guidance for "oral only communication" (for example, a phone call) and guidance for e-mail may not be practical.
Response	The reviewers disagree. E-mail creates a permanent record that can be discovered and referred to in subsequent proceedings (legal or otherwise). Accordingly, the reviewers believe that it is appropriate to consider e-mail as a "document" and subject to the applicable guidance.
Comment	Several commentators expressed concern that the guidance in the second exposure draft was slanted to the consulting environment and not practical within many company situations.

Response	The reviewers did not intend this interpretation. In rewriting the final version of ASOP No. 41 the reviewers have attempted to be more sensitive to this issue. It is not the intention of this ASOP to impose unnecessary burdens on the internal communications of an organization.
TRANSMITTAL MEMORANDUM	
Question 1: Is the revised concept of an actuarial report reflected in this draft both clear and appropriate?	
Comment	Nineteen commentators responded to this question; only one responded in the affirmative. Most interpreted the second exposure draft to significantly "raise the bar," requiring a full-fledged report in many situations where it would be neither necessary nor practical.
Response	This interpretation was not the intent of the second exposure draft. The reviewers have been sensitive to these concerns in this revision. Section 3.3 of this standard has been expanded to clarify the guidance in those circumstances where it is not necessary or practical to include all supporting information. Additional discussion was added to appendix 1.
Question 2: Is the revised ASB position on documentation appropriate?	
Comment	A few commentators felt it was appropriate. The ones that disagreed were those that raised concerns about the withdrawal of ASOP No. 9 (see the first "General" comment above).
Response	After considering the comments, the reviewers still believe that the general approach is appropriate. Some modifications have been made to section 3.8 to incorporate guidance in those situations where full supporting information is not supplied within the document(s) of an actuarial report.
Question 3: Does this revised draft incorporate an appropriate emphasis on the need for the actuary to consider the needs of the intended users?	
Comment	The few commentators that did respond to this question answered in the affirmative. One suggested that the second exposure draft may have gone too far in this regard.
Response	The reviewers believe that the purpose of an actuarial communication is to satisfy the needs of the intended user. Accordingly, this final version has retained this perspective.

SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Comment	Two commentators made suggestions with respect to the description of the standard's guidance.
Response	The description has been revised.
Comment	One commentator expressed concern that the term "actuarial opinion" is not defined.
Response	The reviewers believe that "actuarial opinion" is well understood and did not add a definition.
Comment	One commentator suggested an expansion of the commentary on which communications did not fall within the purview of the standard.
Response	The reviewers believe that the wording is satisfactory.
SECTION 2. DEFINITIONS	
Comment	Several commentators suggested that the definitions in the ASOP adopt the definitions in the Qualification Standards.
Response	The reviewers agreed and adopted the Qualification Standards' definitions for "actuarial communication" and "actuarial services."
Comment	One commentator suggested that "actuarial services" be clearly defined.
Response	A definition consistent with the Qualification Standards has been added. Furthermore, the definition of "actuarial finding" was modified to tie more consistently to this definition.
Comment	One commentator suggested that definitions be added for "data," "methods," and "procedures."
Response	The reviewers concluded that the meanings of these terms were well understood and specific definitions were not needed.
Comment	Several commentators were concerned that the proposed standard can be read to imply that any notes taken by an actuary may be considered an actuarial document.

Response	The reviewers do not believe that an actuary's notes constitute an actuarial communication unless they are provided to an intended user. If an actuary does not distribute his/her notes to an intended user, there is no actuarial communication and the personal notes taken by the actuary are not subject to the requirements of ASOP No. 41. If either the notes or the material contained in the notes is distributed to an intended user or becomes part of the actuarial report, this creates an actuarial communication and the resulting documents would be subject to the requirements of the standard.
Section 2.1, Actuarial Communication	
Comment	A few commentators suggested that the word "electronic" be deleted from definition 2.1, stating that actuarial communications may be written or oral. Either type (written or oral) can be in electronic or hard copy form. One commentator noted the definition of "actuarial communication" deleted the current reference to a principal.
Response	The reviewers retained the definition to remain consistent with the *Code of Professional Conduct* and the Qualification Standards.
Section 2.6, Intended Audience	
Comment	Several commentators suggested deletion of the definition "intended audience" and that definitions be provided for "principal" and "actuarial services."
Response	The reviewers agree with these suggestions and have removed the definition of "intended audience" and provided definitions for "principal" and "actuarial services."
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Requirements for Actuarial Communications	
Comment	One commentator requested the definition of "principal" be retained; another questioned the usage in sections 3.1.3 and 3.2.
Response	The reviewers agreed. The definition of "principal" from the *Code of Professional Conduct* was added, and it was used only when appropriate in the context of the guidance throughout the standard.
Comment	One commentator requested wording in section 3.1 and the addition of a section 3.1.5 to make it clear that, when an actuary communicates to the designated representative of a group of intended users, the actuary is deemed to have communicated to the group.

Response	The reviewers considered this a non-actuarial issue and made no change.
Section 3.1.2, Clarity	
Comment	One commentator felt the phrase "language appropriate to the particular circumstances, taking into account the intended audience" needed further guidance.
Response	The reviewers believe this language is sufficient; not all circumstances can be anticipated.
Section 3.1.3, Timing of Communication	
Comment	Several commentators questioned the wording of section 3.1.3, while one commentator preferred the "guidance" in appendix 1 of the Qualification Standards.
Response	The reviewers agreed and revised section 3.1.3. The reviewers note that appendix 1 of the Qualification Standards is not guidance, and made no change on this account.
Section 3.1.4, Identification of Responsible Actuary	
Comment	Several commentators suggested revised wording for section 3.1.4.
Response	The reviewers were generally satisfied with the wording in the exposure draft but did incorporate minor changes.
Section 3.2, Actuarial Report	
Comment	Several commentators felt that the ASB had "raised the bar" too much in section 3.2 or that the wording seemed only to address consulting situations.
Response	The reviewers modified and expanded former section 3.5 and moved it to section 3.3 to clarify that an actuarial report may be abbreviated in certain situations.
Comment	One commentator felt that the requirement to provide adequate information so that another actuary could assess the reasonableness of the findings was more than was needed if the report was directed to non-actuaries.
Response	Absent circumstances allowing for an abbreviated report under section 3.3, the reviewers believe that information sufficient to make an objective appraisal of the work is a valuable standard. This information does not have to detract from the understandability of a report; it can be presented separately, such as in an appendix.

Comment	One commentator indicated that the principal, as well as the actuary, should be able to determine what was relevant to an actuarial report.
Response	The reviewers disagreed and did not include such authority for the principal.
Section 3.3 (formerly 3.5), Specific Circumstances	
Comment	Two commentators suggested that further examples or clarification of time pressure was needed.
Response	The reviewers believe this is accomplished as part of the modification of this section for clarity, and the additional discussion added to appendix 1.
Section 3.4.2 (formerly 3.3.2), Conflict of Interest	
Comment	One commentator requested a definition of "information."
Response	The reviewers did not feel such a definition was needed and made no change.
Section 3.4.4 (formerly 3.3.4), Responsibility for Assumptions and Methods	
Comment	One commentator felt that the actuary is always responsible for the assumptions and methods; that the lead paragraph of 3.4.4 should so state and that 3.4.4.c. should be deleted. A second commentator suggested that the ASOP should allow the actuary to simply disclose that the assumption or method was not set by the actuary and does not represent the actuary's professional judgment.
Response	The reviewers disagree with both commentators. The first position is not practical in all situations. The second position would be an overly broad exception enabling an actuary to inappropriately avoid professional responsibility. The reviewers believe that the revisions to section 3.4.4 in this version of the standard strike the proper balance between professional responsibility and real-life practicality.
Comment	Two commentators wondered whether "specified by law" (section 3.4.4(a)) could be interpreted to include situations (FAS 87) where assumptions are specified by a third party under some binding authority.
Response	The reviewers believe the language and intent are clear. FAS 87 situations (and all circumstances where the assumption or method is not specified within law) fall under section 3.4.4(b).
Section 3.4.4(b) (formerly 3.3.4(b), Responsibility for Assumptions and Methods	

Comment	One commentator suggested rewording to accommodate assumptions the actuary is not qualified to make.
Response	The reviewers agreed and changed the wording of 3.4.4(b)(3) and 4.3(d)(2) to reflect this.
Comment	One commentator thought that the actuary should be required to provide an affirmative statement of agreement with assumptions that "do not conflict significantly with what the actuary considers to be reasonable."
Response	The reviewers believe this would be an impractical and unnecessary requirement.
Section 3.4.4(c) (formerly 3.3.4(c), Responsibility for Assumptions and Methods	
Comment	One commentator suggested removing the word "prominently."
Response	The reviewers agreed and removed it.
Section 3.4.5 (formerly 3.3.5), Information Date of Report	
Comment	One commentator suggested making dates plural as different information may have different dates.
Response	The reviewers agreed and changed the word to "date(s)."
Section 3.4.6 (formerly 3.3.6), Subsequent Events	
Comment	Two commentators suggested wording changes.
Response	The reviewers agreed and changed some words.
Comment	One commentator suggested that if an actuary is aware of an event that has a material effect on the findings, then it is possible that the actuary would need to submit a revised report.
Response	The reviewers agree, but recognize that this is not always possible. Section 3.4.6(d) has been added to clarify this situation.
Section 3.5 (formerly 3.4), Reconciliation of Material Differences	
Comment	Several commentators suggested "reconcile" was too strong a requirement, and "same assignment" was imprecise.
Response	The reviewers agreed and revised this section.
Section 3.6, Oral Communications	

Comment	One commentator expressed concern that "passed on to other parties" was too broad, and should be restricted to intended users.
Response	The reviewers disagreed and made no change.
Section 3.8, Documentation	
Comment	One commentator felt the actuary should take reasonable steps to ensure that another qualified actuary could take over the work if necessary.
Response	The reviewers agreed and revised this section.
SECTION 4. COMMUNICATIONS AND DISCLOSURES	
Section 4.1.2, Identification of Actuarial Documents	
Comment	One commentator suggested that this provision seems overly broad and cumbersome, and should be removed.
Response	The reviewers disagreed, feeling identification of documents is important, and made no change.
Section 4.1.3, Disclosures in Actuarial Reports	
Comment	One commentator felt that a report provided by the actuary will be so laden down by disclosures that clear and concise communications will be difficult.
Response	The reviewers disagreed and made no change. They noted that disclosures could be in a separate section of the report from the findings, and so do not prevent clarity of communication.
Comment	One commentator felt section 4.1.3 should be expanded to include disclosures required by section 3.4.4.
Response	The reviewers disagreed and made no change The disclosures required by section 3.4.4 are addressed in sections 4.2 and 4.3.
Comment	One commentator felt section 4.1.3 should reference the exceptions addressed in section 3.3.
Response	The reviewers agreed and referenced section 3.3 in section 4.1.3.
Comment	One commentator felt where the actuarial report consists of more than one document, the actuary should disclose the documents that comprise the full report.

Response	The reviewers agreed and added paragraph j. to section 4.1.3.
Comment	One commentator felt that "on which the actuary relied" should be moved to immediately after "any information."
Response	The reviewers agreed and made this change.
Comment	One commentator felt it would be helpful to include examples to clarify the phrase "unless it is inappropriate to do so."
Response	The reviewers felt that incorporating a list of examples may limit the actuary's judgment, and made no change.
Section 4.2, Certain Assumptions or Methods Prescribed by Law	
Comment	One commentator requested that section 4.2 should be expanded to clarify that assumptions and methods prescribed by or under the authority of FASB, should be treated as "prescribed by law."
Response	The reviewers disagreed in part and made no change. An assumption or method prescribed by FASB would come under section 4.2 (assuming FASB is "other binding authority"). An assumption or method prescribed by a third party under the authority of FASB would not be covered by section 4.2.
Section 4.3, Responsibility for Assumptions and Methods	
Comment	One commentator questioned whether every assumption or method used for a monthly valuation had to be addressed in each actuarial report, or could reference be made to a master document?
Response	The reviewers made no change as this is the intent of section 3.2, which recognizes that an actuarial report often consists of multiple documents. The master document referred to in the comment fits this concept well.
Comment	One commentator questioned the need to disclose in an internal document "the reason why the other party set the assumption or method"
Response	The reviewers agreed and qualified section 4.3 by reference to section 3.3.
Comment	One commentator suggested adding a section 4.3(d)(3) with language such as "that the actuary agreed with the assumption or method."
Response	The reviewers made no change, since section 4.3 is only triggered if the actuary disowns the assumption or method.

Comment	One commentator pointed out that the guidance in this section is different than the guidance for similar situations under section 5.4.5 of ASOP No. 20.
Response	The reviewers believe the guidance in this section is appropriate to the general situation and have made no change. Section 1.2 of this standard states that where guidance of other standards conflicts with the guidance in this standard, the other standard applies.
Section 4.4, Deviation From the Guidance of an ASOP	
Comment	One commentator objected to the revision of section 4.4 (from the existing ASOP) and requested the original language be retained.
Response	The reviewers disagreed and made no change. The reviewers believe that the disclosures required under section 4.4 are adequately strong to address the concerns of the commentator. The revised section 4.4 is part of the ASB initiative to move all substantive guidance on deviation into ASOP No. 41 (and thus achieve consistency across ASOPs.) Part of this initiative is to clarify that "deviation" means deviating from the guidance of an ASOP. Compliance with the ASOP is still possible through adequate disclosure.

ACTUARIAL STANDARDS BOARD

Actuarial Standard
of Practice
No. 43

Property/Casualty Unpaid Claim Estimates

Developed by the
Subcommittee on Reserving of the
Casualty Committee of the
Actuarial Standards Board

Adopted by the
Actuarial Standards Board
June 2007
Updated for Deviation Language Effective May 1, 2011

(Doc. No. 159)

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APPENDIXES

June 2007

TO: Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Property/Casualty Unpaid Claim Estimates

FROM: Actuarial Standards Board (ASB)

SUBJ: Actuarial Standard of Practice (ASOP) No. 43

This booklet contains the final version of ASOP No. 43, *Property/Casualty Unpaid Claim Estimates.*

Background

Currently, no ASOP exists to provide guidance to actuaries developing unpaid claim estimates. ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, provides guidance to the actuary in issuing a written statement of actuarial opinion but not in developing an unpaid claim estimate. The Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* contains some guidance. However, that document is currently under review and the revised document is expected to contain significantly less guidance than the current version. Therefore, to address this issue, the ASB charged the Subcommittee on Reserving of the ASB Casualty Committee with creating an ASOP to provide guidance to actuaries regarding property/casualty unpaid claim estimates.

First Exposure Draft

The first exposure draft of this ASOP was approved for exposure in February 2006 with a comment deadline of June 30, 2006. Thirty-two comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was approved for exposure in February 2007 with a comment deadline of May 1, 2007. The Subcommittee on Reserving carefully considered the nine comment letters received and made changes to the language in several sections in response. For a summary of the issues contained in these comment letters, please see appendix 2.

Due to the volume of comments received throughout the exposure period on the Actuarial Central Estimate concept, an additional appendix (see appendix 3) was added to address the

comments.

The Subcommittee on Reserving thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in June 2007 to adopt this standard.

Subcommittee on Reserving of the Casualty Committee

Raji Bhagavatula, Chairperson

Ralph S. Blanchard	Chandrakant Patel
Edward W. Ford	David S. Powell
Louise A. Francis	Jason L. Russ
Margaret Wendy Germani	Lee R. Steeneck
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ACTUARIAL STANDARD OF PRACTICE NO. 43

PROPERTY/CASUALTY UNPAID CLAIM ESTIMATES

STANDARD OF PRACTICE

Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to the estimation of loss and loss adjustment expense for unpaid claims for property/casualty coverages. Any reference to "unpaid claims" in this standard includes (unless explicitly stated otherwise) the associated unpaid claim adjustment expense even when not accompanied by the estimation of unpaid claims.

1.2 Scope—This standard applies to actuaries when performing professional services related to developing unpaid claim estimates only for events that have already occurred or will have occurred, as of an accounting date, exclusive of estimates developed solely for ratemaking purposes. This standard applies to the actuary when estimating unpaid claims for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables.

This standard applies to the actuary only with respect to unpaid claim estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*) in written or electronic form. Actions taken by the actuary's principal regarding such estimates are beyond the scope of this standard.

The terms "reserves" and "reserving" are sometimes used to refer to "unpaid claim estimates" and "unpaid claim estimate analysis." In this standard, the term "reserve" is limited to its strict definition as an amount booked in a financial statement. Services described above are covered by this standard, regardless as to whether the actuary refers to the work performed as "reserving," "estimating unpaid claims" or any other term.

This standard does not apply to the estimation of items that may be a function of unpaid claim estimates or claim outcomes, such as (but not limited to) loss-based taxes, contingent commissions and retrospectively rated premiums.

This standard does not apply to unpaid claims under a "health benefit plan" covered by ASOP No. 5, *Incurred Health and Disability Claims*, or included as "health and disability liabilities" under ASOP No. 42, *Determining Health And Disability Liabilities Other Than Liabilities for Incurred Claims*. However, this standard does apply to health benefits

associated with state or federal workers compensation statutes and liability policies.

With respect to discounted unpaid claim estimates for property/casualty coverages, this standard addresses the determination of the undiscounted value of such estimates. The actuary should be guided by ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations to reflect the effects of discounting.

An actuary may develop an unpaid claim estimate in the context of issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves. This standard addresses the determination of the unpaid claim estimate. The actuary should be guided by ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations associated with the issuance of such a statement.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for any actuarial work product covered by this standard's scope produced on or after September 1, 2007.

Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Central Estimate—An estimate that represents an expected value over the range of reasonably possible outcomes.

2.2 Claim Adjustment Expense—The costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid.

2.3 Coverage—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.

2.4 Event—The incident or activity that triggers potential for claim or claim adjustment expense payment.

2.5 Method—A systematic procedure for estimating the unpaid claims.

2.6 Model—A mathematical or empirical representation of a specified phenomenon.

2.7 Model Risk—The risk that the methods are not appropriate to the circumstances or the models are not representative of the specified phenomenon.

2.8 Parameter Risk—The risk that the parameters used in the methods or models are not representative of future outcomes.

2.9 Principal—The actuary's client or employer. In situations where the actuary has both a client and an employer, as is common for consulting actuaries, the facts and circumstances will determine whether the client or the employer (or both) is the principal with respect to any portion of this standard.

2.10 Process Risk—The risk associated with the projection of future contingencies that are inherently variable, even when the parameters are known with certainty.

2.11 Unpaid Claim Estimate—The actuary's estimate of the obligation for future payment resulting from claims due to past events.

2.12 Unpaid Claim Estimate Analysis—The process of developing an unpaid claim estimate.

Section 3. Analysis of Issues and Recommended Practices

3.1 Purpose or Use of the Unpaid Claim Estimate—The actuary should identify the intended purpose or use of the unpaid claim estimate. Potential purposes or uses of unpaid claim estimates include, but are not limited to, establishing liability estimates for external financial reporting, internal management reporting, and various special purpose uses such as appraisal work and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider adjustments to accommodate the multiple purposes to the extent that, in the actuary's professional judgment, it is appropriate and practical to make such adjustments.

3.2 Constraints on the Unpaid Claim Estimate Analysis—Sometimes constraints exist in the performance of an actuarial analysis, such as those due to limited data, staff, time or other resources. Where, in the actuary's professional judgment, the actuary believes that such constraints create a significant risk that a more in-depth analysis would produce a materially different result, the actuary should notify the principal of that risk and communicate the constraints on the analysis to the principal.

3.3 Scope of the Unpaid Claim Estimate—The actuary should identify the following:

a. the intended measure of the unpaid claim estimate;

1. Examples of various types of measures for the unpaid claim estimate include, but are not limited to, high estimate, low estimate, median, mean, mode, actuarial central estimate, mean plus risk margin, actuarial central estimate plus risk margin, or specified percentile.

   As defined in section 2.1, the actuarial central estimate represents an expected value over the range of reasonably possible outcomes. Such range of reasonably possible outcomes may not include all conceivable outcomes, as, for example, it would not include conceivable extreme events where the contribution of such events to an expected value is not reliably estimable. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This description is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.

   The terms "best estimate" and "actuarial estimate" are not sufficient identification of the intended measure, as they describe the source or the quality of the estimate but not the objective of the estimate.

2. The actuary should consider whether the intended measure is appropriate to the intended purpose or use of the unpaid claim estimate.

3. The description of the intended measure should include the identification of whether any amounts are discounted.

b. whether the unpaid claim estimate is to be gross or net of specified recoverables;

c. whether and to what extent collectibility risk is to be considered when the unpaid claim estimate is affected by recoverables;

d. the specific types of unpaid claim adjustment expenses covered in the unpaid claim estimate (for example, coverage dispute costs, defense costs, and adjusting costs);

e. the claims to be covered by the unpaid claim estimate (for example, type of loss, line of business, year, and state); and

f. any other items that, in the actuary's professional judgment, are needed to describe the scope sufficiently.

3.4 Materiality—The actuary may choose to disregard items that, in the actuary's professional judgment, are not material to the unpaid claim estimate given the intended purpose and use. The actuary should evaluate materiality based on professional judgment, taking into account the requirements of applicable law and the intended purpose of the unpaid claim estimate.

3.5 Nature of Unpaid Claims—The actuary should have an understanding of the nature of the unpaid claims being estimated. This understanding should be based on what a qualified actuary in the same practice area could reasonably be expected to know or foresee as being relevant and material to the estimate at the time of the unpaid claim estimate analysis, given the same purpose, constraints, and scope. The actuary need not be familiar with every aspect of potential unpaid claims.

Examples of aspects of the unpaid claims (including any material trends and issues associated with such elements) that may require an understanding include the following:

a. coverage;

b. conditions or circumstances that make a claim more or less likely or the cost more or less severe;

c. the underlying claim adjustment process; and

d. potential recoverables.

3.6 Unpaid Claim Estimate Analysis—The actuary should consider factors associated with the unpaid claim estimate analysis that, in the actuary's professional judgment, are material and are reasonably foreseeable to the actuary at the time of estimation. The actuary is not expected to become an expert in every aspect of potential unpaid claims.

The actuary should consider the following items when performing the unpaid claim estimate analysis:

3.6.1 Methods and Models—The actuary should consider methods or models for estimating unpaid claims that, in the actuary's professional judgment, are appropriate. The actuary should select specific methods or models, modify such methods or models, or develop new methods or models based on relevant factors including, but not limited to, the following:

a. the nature of the claims and underlying exposures;

b. the development characteristics associated with these claims;

c. the characteristics of the available data;

d. the applicability of various methods or models to the available data; and

e. the reasonableness of the assumptions underlying each method or model.

The actuary should consider whether a particular method or model is appropriate in light of the purpose, constraints, and scope of the assignment. For example, an

unpaid claim estimate produced by a simple methodology may be appropriate for an immediate internal use. The same methodology may be inappropriate for external financial reporting purposes.

The actuary should consider whether, in the actuary's professional judgment, different methods or models should be used for different components of the unpaid claim estimate. For example, different coverages within a line of business may require different methods.

The actuary should consider the use of multiple methods or models appropriate to the purpose, nature and scope of the assignment and the characteristics of the claims unless, in the actuary's professional judgment, reliance upon a single method or model is reasonable given the circumstances. If for any material component of the unpaid claim estimate the actuary does not use multiple methods or models, the actuary should disclose and discuss the rationale for this decision in the actuarial communication.

In the case when the unpaid claim estimate is an update to a previous estimate, the actuary may choose to use the same methods or models as were used in the prior unpaid claim estimate analysis, different methods or models, or a combination of both. The actuary should consider the appropriateness of the chosen methods or models, even when the decision is made not to change from the previously applied methods or models.

3.6.2 Assumptions—The actuary should consider the reasonableness of the assumptions underlying each method or model used. Assumptions generally involve significant professional judgment as to the appropriateness of the methods and models used and the parameters underlying the application of such methods and models. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends. The actuary should use assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent. Note that bias with regard to an expected value estimate would not necessarily be bias with regard to a measure intended to be higher or lower than an expected value estimate.

The actuary should consider the sensitivity of the unpaid claim estimates to reasonable alternative assumptions. When the actuary determines that the use of reasonable alternative assumptions would have a material effect on the unpaid claim estimates, the actuary should notify the principal and attempt to discuss the anticipated effect of this sensitivity on the analysis with the principal.

When the principal is interested in the value of an unpaid claim estimate under a particular set of assumptions different from the actuary's assumptions, the actuary may provide the principal with the results based on such assumptions, subject to appropriate disclosure.

3.6.3 Data—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to the selection of data to be used, relying on data supplied by others, reviewing data, and using data.

3.6.4 Recoverables—Where the unpaid claim estimate analysis encompasses multiple types of recoverables, the actuary should consider interaction among the different types of recoverables and should adjust the analysis to reflect that interaction in a manner that the actuary deems appropriate.

3.6.5 Gross vs. Net—The scope of the unpaid claim estimate analysis may require estimates both gross and net of recoverables. Gross and net estimates may be viewed as having three components, which are the gross estimate, the estimated recoverables, and the net estimate. The actuary should consider the particular facts and circumstances of the assignment when choosing which components to estimate.

3.6.6 External Conditions—Claim obligations are influenced by external conditions, such as potential economic changes, regulatory actions, judicial decisions, or political or social forces. The actuary should consider relevant external conditions that are generally known by qualified actuaries in the same practice area and that, in the actuary's professional judgment, are likely to have a material effect on the actuary's unpaid claim estimate analysis. However, the actuary is not required to have detailed knowledge of or consider all possible external conditions that may affect the future claim payments.

3.6.7 Changing Conditions—The actuary should consider whether there have been significant changes in conditions, particularly with regard to claims, losses, or exposures, that are likely to be insufficiently reflected in the experience data or in the assumptions used to estimate the unpaid claims. Examples include reinsurance program changes and changes in the practices used by the entity's claims personnel to the extent such changes are likely to have a material effect on the results of the actuary's unpaid claim estimate analysis. Changing conditions can arise from circumstances particular to the entity or from external factors affecting others within an industry. When determining whether there have been known, significant changes in conditions, the actuary should consider obtaining supporting information from the principal or the principal's duly authorized representative and may rely upon their representations unless, in the actuary's professional judgment, they appear to be unreasonable.

3.6.8 Uncertainty—The actuary should consider the uncertainty associated with the unpaid claim estimate analysis. This standard does not require or prohibit the actuary from measuring this uncertainty. The actuary should consider the purpose and use of the unpaid claim estimate in deciding whether or not to measure this uncertainty. When the actuary is measuring uncertainty, the actuary should consider the types and sources of uncertainty being measured and choose the methods, models, and

assumptions that are appropriate for the measurement of such uncertainty. For example, when measuring the variability of an unpaid claim estimate covering multiple components, consideration should be given to whether the components are independent of each other or whether they are correlated. Such types and sources of uncertainty surrounding unpaid claim estimates may include uncertainty due to model risk, parameter risk, and process risk.

3.7 Unpaid Claim Estimate—The actuary should take into account the following with respect to the unpaid claim estimate:

3.7.1 Reasonableness—The actuary should assess the reasonableness of the unpaid claim estimate, using appropriate indicators or tests that, in the actuary's professional judgment, provide a validation that the unpaid claim estimate is reasonable. The reasonableness of an unpaid claim estimate should be determined based on facts known to, and circumstances known to or reasonably foreseeable by, the actuary at the time of estimation.

3.7.2 Multiple Components—When the actuary's unpaid claim estimate comprises multiple components, the actuary should consider whether, in the actuary's professional judgment, the estimates of the multiple components are reasonably consistent.

3.7.3 Presentation—The actuary may present the unpaid claim estimate in a variety of ways, such as a point estimate, a range of estimates, a point estimate with a margin for adverse deviation, or a probability distribution of the unpaid claim amount. The actuary should consider the intended purpose or use of the unpaid claim estimate when deciding how to present the unpaid claim estimate.

3.8 Documentation—The actuary should consider the intended purpose or use of the unpaid claim estimate when documenting work, and should refer to ASOP No. 41, *Actuarial Communications*.

Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the unpaid claim estimate and refer to ASOP Nos. 23 and 41.

In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

a. the intended purpose(s) or use(s) of the unpaid claim estimate, including adjustments that the actuary considered appropriate in order to produce a single work product for multiple purposes or uses, if any, as described in section 3.1;

b. significant limitations, if any, which constrained the actuary's unpaid claim estimate analysis such that, in the actuary's professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result, as described in section 3.2;

c. the scope of the unpaid claim estimate, as described in section 3.3;

d. the following dates: (1) the accounting date of the unpaid claim estimate, which is the date used to separate paid versus unpaid claim amounts; (2) the valuation date of the unpaid claim estimate, which is the date through which transactions are included in the data used in the unpaid claim estimate analysis; and (3) the review date of the unpaid claim estimate, which is the cutoff date for including information known to the actuary in the unpaid claim estimate analysis, if appropriate. An example of such communication is as follows: "This unpaid claim estimate as of December 31, 2005 was based on data evaluated as of November 30, 2005 and additional information provided to me through January 17, 2006.";

e. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the unpaid claim estimate;

f. significant events, assumptions, or reliances, if any, underlying the unpaid claim estimate that, in the actuary's professional judgment, have a material effect on the unpaid claim estimate, including assumptions provided by the actuary's principal or an outside party or assumptions regarding the accounting basis or application of an accounting rule. If the actuary depends upon a material assumption, method, or model that the actuary does not believe is reasonable or cannot determine to be reasonable, the actuary should disclose the dependency of the estimate on that assumption/method/model and the source of that assumption/method/model. The actuary should use professional judgment to determine whether further disclosure would be appropriate in light of the purpose of the assignment and the intended users

of the actuarial communication;

g. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

h. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

i. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Additional Disclosures—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:

a. In the case when the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided, for example, a range of estimates of the intended measure (each of such estimates considered to be a reasonable estimate on a stand-alone basis); a range representing a confidence interval within the range of outcomes produced by a particular model or models; or a range representing a confidence interval reflecting certain risks, such as process risk and parameter risk.

b. In the case when the unpaid claim estimate is an update of a previous estimate, the actuary should disclose changes in assumptions, procedures, methods or models that the actuary believes to have a material impact on the unpaid claim estimate and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.

Appendix 1

Background and Current Practices

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Background

This standard defines issues and considerations that an actuary should take into account when estimating unpaid claim and claim adjustment expense for property and casualty coverages or hazard risks. The *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* was adopted by the Board of Directors of the Casualty Actuarial Society in May 1988. The *Statement of Principles* has served as the primary guidance regarding estimation of unpaid property and casualty claim and claim adjustment expense amounts providing both principles and considerations related to practice. In conjunction with the development of this standard, the *Statement of Principles* is undergoing revision to focus on principles rather than also discussing considerations.

A decision was made to exclude unpaid claim estimates developed for ratemaking purposes from the scope of this standard. This was done to avoid placing inappropriate requirements on unpaid claim estimates in the ratemaking context, and to keep the scope workable by excluding additional considerations only applicable to the ratemaking context. Ratemaking requires more of a hypothetical analysis of possible future events than an analysis of the cost of past events. Hence, the selection and evaluation of assumptions and methods for ratemaking purposes may be different from the selection and evaluation of such for past event unpaid claim estimates.

Current Practices

Actuaries are guided by the *Statement of Principles Regarding Property and Liability Loss and Loss Adjustment Expense Reserves* of the Casualty Actuarial Society. Other ASOPs issued by the Actuarial Standards Board pertaining to claim and claim adjustment expense estimates have included ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*; ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 23, *Data Quality*; ASOP No. 36, *Statement of Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, and ASOP No. 41, *Actuarial Communications*. In addition, since 1993, the Casualty Practice Council of American Academy of Actuaries has published practice notes addressing current National Association of Insurance Commissioners' requirements for the statement of actuarial opinion. The practice notes describe some current practices and show illustrative wording for handling issues and problems. While these practice notes (and future practice notes issued after the effective date of this standard) can be updated to react in a timely manner to new concerns or requirements, they are not binding, and they have not gone through the exposure and adoption process of the standards of actuarial practice promulgated by the Actuarial Standards

Board.

There are also numerous educational papers in the public domain relevant to the topic of unpaid claim estimates, including those published by the Casualty Actuarial Society. Some of these are refereed and others are not. While these may provide useful educational guidance to practicing actuaries, none is an actuarial standard.

Appendix 2

Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Property/Casualty Unpaid Claim Estimates*, was issued in February 2007 with a comment deadline of May 1, 2007. Nine comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Subcommittee on Reserving carefully considered all comments received and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 4 refer to those in the second exposure draft.

GENERAL COMMENTS	
Comment	Two commentators requested that the standard comment on what would constitute reasonable review of a previous estimate. Specifically, they were concerned with actuaries reviewing an earlier estimate with the benefit of hindsight, particularly in a litigation situation.
Response	A sentence has been added to section 3.7.1, Reasonableness, to address this issue.
SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE	
Section 1.2, Scope	
Comment	One commentator suggested a clarification to section 1.2, inserting the words "or will have occurred" immediately after the words "for events that have already occurred."
Response	The reviewers agree and made the change.
Comment	One commentator was concerned that the development of unpaid claim estimates for ratemaking purposes would benefit from much of what is in this standard, despite the ratemaking scope exclusion in this standard. The recommendation was to retain the ratemaking exclusion in this standard but to then begin work on a revision that would remove such an exclusion.
Response	The reviewers agree with retaining the ratemaking scope exclusion for this standard but believe the ratemaking situation is outside their current charge.

Comment	One commentator suggested adding the words "specific types of" before the word "recoverables" in the first paragraph of section 1.2, as otherwise it might imply that all types of recoverables are being discussed.
Response	The reviewers disagree with the suggestion, as the intent is to potentially include all types of recoverables related to unpaid claims, relying on the actuary in section 3.3, Scope of the Unpaid Claim Estimate, to identify the particular recoverables (if any) applicable to the given purpose or use of the unpaid claim estimate(s) being developed. The reviewers made no change.
Comment	Two commentators were concerned that some may be confused by the use of the term "unpaid claim estimates" rather than "reserves."
Response	The reviewers added a paragraph to section 1.2 for clarity.
Comment	One commentator was concerned that the scope exclusion for items that "may be a function of unpaid claim estimates" would inadvertently exclude recoverables that are included in unpaid claims.
Response	The reviewers believe that the standard is sufficiently clear (as reflected in the first paragraph, last sentence of section 1.2) that such recoverables are covered by the standard.
Comment	One commentator suggested adding "pricing" and "premiums" to the list of items that are a function of unpaid claim estimates or claim outcomes but not included in this standard's scope.
Response	The reviewers do not feel this is necessary, as ratemaking is already excluded in the section's first paragraph, and this list is not meant to be all inclusive.
Comment	Two commentators expressed concern that health insurance written by companies filing property/casualty annual statements may be included in the scope. One of these commentators recommended addressing this by explicitly excluding health insurance from the scope. The other commentator recommended that there was no need for a separate property casualty standard on unpaid claim estimates, as the property/casualty perspective could probably be addressed in the current ASOP No. 5, *Incurred Health and Disability Claims*. The latter commentator also suggested a definition of "property/casualty" be provided if a separate property/casualty standard was to be adopted.
Response	The reviewers agree that such confusion may exist, and added a paragraph to section 1.2, Scope.
Comment	One commentator stated the end of section 1.2 dealing with conflict with applicable law, etc. is not necessary, and that the term "provision" (found in section 1.3, Cross References) is also used in some jurisdictions in place of policy or loss reserves.
Response	The reviewers disagree as this wording is standard for all ASOPs and made no change.

SECTION 2. DEFINITIONS	
Section 2.1, Actuarial Central Estimate	
Comment	One commentator objected to the term "actuarial central estimate," due to the concern that it would be a truncated mean in most situations, biased low relative to the expected value, and recommended that if absolutely needed in the standard that it be relabeled without the word "actuarial" as part of the label.
Response	The reviewers disagree with the deletion of the term "actuarial" and made no change. Refer to appendix 3.
Comment	One commentator was concerned that the use of the term "expected value" in the definition of "actuarial central estimate" would imply a statistical mean. The commentator suggested changing "expected value" to "central tendency…such as an average or an expected value."
Response	The reviewers considered similar wording in the drafting process and made no change. Refer to appendix 3.
Comment	One commentator suggested that different terms be used to describe the results from methods vs. models. Specifically, the commentator suggested the term "actuarial central estimate" be limited to describing a result from a method, while the term "actuarial distribution estimate" or some other term be used to describe the results of a model.
Response	The reviewers believe the standard allows the actuary to describe the results using whatever term the actuary sees fit to use (the term "actuarial central estimate" is provided as just one of many possible terms that can be used) and made no change.
Section 2.3, Coverage	
Comment	One commentator was concerned that the definition of "coverage" did not include self-insured first party claims.
Response	The reviewers could not envision a situation where a "liability" or claim would exist with regard to first party self-insured losses. Rather, this was viewed as more of a reduction in asset value. As such, the reviewers did not agree with the need to address self-insured first party claims and made no change.
Section 2.5, Method and 2.6, Model	
Comment	One commentator stated, "There are definite differences between 'methods' and 'models' that are much more substantial and fundamental than" what is in the proposed standard. The commentator suggested that more complete definitions be taken from the CAS Working Party paper on reserve variability.
Response	The definitions in the standard are abbreviated versions of what is in the referenced Working Party paper. The reviewers believe that further elaboration is unnecessary, although reference to various CAS publications has been added to appendix 1.
Section 2.7. Model Risk	
Comment	One commentator believed that combining reference to methods and models in the definition of "model risk" in section 2.7 caused grammatical problems. The suggested fix was to create a new term, "method risk," which would also lead to a slight change in paragraph 3.6.8, Uncertainty.
Response	The reviewers believe that common usage is to include what was described as "method risk" in the category of "model risk." Hence, a change was made to the definition, but a separate term (and definition) for "method risk" was not added.

Section 2.8, Parameter Risk	
Comment	One commentator objected to the reference to "methods" in the definition of "parameter" risk, due to a belief that "since a 'method' does not have an underlying distribution there are no parameters to estimate."
Response	The reviewers believe that this is within the purview of common usage of the terms "methods" and "parameters," and made no change.
Comment	One commentator suggested adding a definition of "parameter" for consistency purposes.
Response	The reviewers believe that such a definition is unnecessary and made no change.
Section 2.11, Unpaid Claim Estimates	
Comment	One commentator suggested modifying this definition (and the unpaid claim estimate analysis definition) to clarify that unpaid claim estimates are synonymous with loss reserve estimates or unpaid claim liability estimates in financial reporting contexts.
Response	The reviewers added language to section 1.2, Scope, for clarity.
SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES	
Section 3.1, Purpose or Use of the Unpaid Claim Estimate	
Comment	One commentator agreed with the use of the term "unpaid claim estimate" rather than "reserve" to avoid the financial reporting context, but believed that reference to the "intended purpose" of the estimate forced the discussion back solely to reserves and financial reporting. The suggested fix was to remove any discussion of "intended purpose" in the standard, and focus solely on estimating the distribution of possible future outcomes in the standard. (This concern also led to minor changes suggested in section 1.2, Scope.)
Response	The reviewers disagree that the only "intended purposes" would be those relating to financial reporting. Other "intended purposes" (some of which are listed in section 3.1) include merger/acquisition-related valuations, scenario analyses for risk management purposes, valuations as part of commutation discussions, etc. The reviewers made no change.
Comment	The last sentence of this section states "the actuary…should consider adjustments to accommodate the multiple purposes to the extent…it is appropriate and practical" to do so. One commentator asked if the intent was for the actuary to adjust the estimate or to provide different estimates for each purpose/use.
Response	The reviewers discussed different possible approaches to addressing this situation and decided that the standard should be silent on whether to produce multiple estimates, produce a single estimate that attempts to accommodate both purposes (assuming that this is possible), or some other option. Instead, the standard requires the actuary to consider some adjustment and leaves it up to the actuary's professional judgment as to whether or what kind of adjustment to make. The reviewers made no change.

Section 3.2, Constraints on the Unpaid Claim Estimate Analysis	
Comment	One commentator suggested replacing "staff" with "resources" in this section as to be more general.
Response	The reviewers agree and changed the language.
Comment	One commentator suggested replacing "result" with "estimate" in this section so that it is more consistent with the rest of the ASOP.
Response	The reviewers disagree. As worded, "result" could incorporate other parts of the analysis beyond the estimate, such as analysis of uncertainty (if included in the assignment's scope). The reviewers made no change.
Comment	Where there is a significant risk of the type described in this section, one commentator recommended that this situation be a required disclosure.
Response	The reviewers disagree noting that required disclosure is already addressed in section 4.1(b) and made no change.
Section 3.3, Scope of the Unpaid Claim Estimate	
Comment	One commentator was concerned that the wording in 3.3(a)(1) may cause actuaries to limit themselves to only the alternatives listed. Alternate wording was suggested.
Response	The reviewers agree and changed the wording in response.
Comment	One commentator suggested an editorial change for section 3.3(c), whereby "is to be considered" would be changed to "is considered."
Response	The reviewers disagree with the suggestion, as section 3.3 addresses identification of the scope of the work in advance of the actual analysis. Hence, "is to be" is more appropriate than "is" in this context. The reviewers made no change.
Comment	One commentator suggested replacing the phrase "any other items" in section 3.3(f) with "other items" or "any other significant items," due to a concern that the current wording would be too all inclusive and could result in excessive procedures.
Response	The reviewers disagree, as the reference at the end of the paragraph ("needed to describe the scope sufficiently") already addresses the stated concern, and made no change.
Comment	One commentator suggested replacing "material to the actuary" with "material to the estimate" in section 3.5, Nature of Unpaid Claims, first paragraph.
Response	The reviewers agree and made the change.
Section 3.6, Unpaid Claim Estimate Analysis	
Comment	One commentator was concerned with the possible ambiguity with the term "factors" in this paragraph.
Response	The reviewers believe that this possible ambiguity is sufficiently addressed by the discussion in section 3.6.

Comment	One commentator suggested that additional guidance on unpaid claim adjustment expenses be provided for situations involving prepaid expenses and third party administrators (TPAs).
Response	The standard already includes claim adjustment expenses in its scope, as "unpaid claims" is defined in section 1.1, Purpose, as including the related claim adjustment expenses. The reviewers also believe that prepayments to TPAs for the expense of adjusting claims is a specific situation and, as such, is too detailed for the general guidance in this standard. The reviewers made no change.
Section 3.6.1, Methods and Models	
Comment	One commentator stated that "we should be doing all we can to foster the rigorous use of stochastic models in favor of traditional deterministic methods" and objected to the use of "methods" and "models" as essentially interchangeable terms.
Response	The reviewers consider judgment to be a major component of the application of both methods and models. As such, the reviewers do not consider one to be clearly superior to the other in all situations. The reviewers made no change.
Comment	In section 3.6.1, in the phrase that says, "For example, different coverages within a line of business may require different methods," one commentator questioned whether the word "require" was appropriate.
Response	The reviewers believe that the word "require" is appropriate in this context, given that it is used in the context of an example and not in providing a direct requirement. The reviewers made no change.
Comment	One commentator suggested wording with regard to required disclosure if multiple methods were not used for "any component." The suggestion limited the disclosure to only material components. The same commentator also asked for clarification of the term "component."
Response	The reviewers reworded the section to clarify that the requirement only existed for material components. The suggested clarification of the term "component" was not adopted, as the reviewers felt that it would lead to a list of component examples that would never be complete for all applications.
Section 3.6.3, Data	
Comment	One commentator suggested adding guidance that "additional liabilities may be necessary if the data does not balance to recorded claim expenses, i.e., if there is a timing difference between when a claim is shown as paid in the actuarial data and when it is recorded by the principal."
Response	The reviewers believe that this is a specific situation and is covered by the general guidance in section 3.6.1(c). The reviewers made no change.
Section 3.6.6, External Conditions	
Comment	One commentator suggested that section 3.6.6, External Conditions, focused on past or current conditions, while section 3.6.7, Changing Conditions, focused on current or future conditions, and that these time horizons might be clarified in the standard.
Response	The reviewers do not agree that the time horizons in the two sections are constrained as suggested by the commentator and made no change.

Section 3.6.7, Changing Conditions	
Comment	Two commentators suggested that the actuary should be required to evaluate the reasonableness of management's representations (as referred to in section 3.6.7) under certain circumstances. One of these commentators stated the reference to "reasonable representations" in section 3.6.7 already implies the actuary is required to perform such an evaluation but suggested the standard state this requirement explicitly.
Response	The reviewers disagreed that the standard should require an actuary to perform an evaluation affirming the reasonableness of management's representations and have revised the language to indicate the actuary may rely upon their representations unless, in the actuary's professional judgment, they appear to be unreasonable**.**
Section 3.6.8, Uncertainty	
Comment	One commentator suggested that examples of uncertainty measures be provided.
Response	The reviewers did not believe that such a list was necessary and made no change.
Comment	One commentator suggested that the original reference to the covariance of multiple component's estimates implied particular statistical tests or relationships that may not be amenable to testing. Replacement wording was suggested.
Response	The reviewers acknowledge the concern and developed new wording that addressed the concern expressed.
Comment	One commentator stated that since the concept of a risk margin is implied by this section, this section should discuss risk margins explicitly.
Response	The reviewers disagree that discussion of uncertainty requires discussion of a risk margin and made no change.
Section 3.7.1, Reasonableness	
Comment	One commentator asked if the actuary should also be assessing the reasonableness of the estimate relative to its intended purpose.
Response	The reviewers believe that the required disclosures in section 4.1, Actuarial Communications, and ASOP No. 41, *Actuarial Communications*, sufficiently address the commentator's concerns and made no change.

Section 3.7.2, Multiple Components	
Comment	One commentator stated, "I am not certain how 'estimates of the multiple components' can be consistent. I can see how the assumptions used can be consistent, the methods can be consistent, or they can be consistently developed." As a result, the commentator suggested that this section be clarified.
Response	The reviewers believe that the correct focus is on consistency of the estimates of the multiple components as stated. It is not always apparent whether or not the assumptions and/or models/methods underlying the estimates are consistent until the results of those assumptions/models/methods are evaluated. For example, an estimate of gross claim liabilities and a separate estimate of net claim liabilities may each seem to be reasonable when evaluated individually based on the underlying assumptions/models/methods used in their estimation, but the resulting relationship between gross and net estimates may be found to be unreasonable, indicating that the estimates were not reasonably consistent. The reviewers made no change.
Section 3.7.3, Presentation	
Comment	One commentator recommended that the standard require that the methods and/or models be appropriate to the intended purpose of the estimate, and that this is more important than requiring such of the estimate presentation.
Response	The wording in section 3.6.1, Methods and Models, already addresses this issue and no change was made.
Section 4. Communications and Disclosures	
Section 4.1, Actuarial Communications	
Comment	One commentator noted that the definition of "valuation date" found in section 4.1(d) differed from that found in ASOP No. 41, *Actuarial Communications*, "the date as of which the liabilities are determined."
Response	The reviewers believe that the definition in section 4.1(d) of this standard conforms with standard usage of the term among casualty actuaries and made no change.
Comment	One commentator suggested further elaborating on this disclosure requirement by requiring "specific comments regarding the major factors or particular conditions applicable to the unpaid claim estimate." Otherwise, the commentator was concerned that this would result in too many boilerplate disclosures about the risk.
Response	The reviewers acknowledge the concern and addressed it by adding the word "specific" before "significant" in section 4.1(e).
Section 4.2, Additional Disclosures	
Comment	Where the unpaid claim estimate is an update of a previous estimate, one commentator suggested requiring that the amount of change in estimate be disclosed, with reasons provided whenever the change was significant and the reasons for the change were known.
Response	The reviewers did not agree and made no change.

Appendix	
Appendix 1—Background	
Comment	One commentator suggested a change to appendix 1 regarding the proposed revision to the CAS *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves*. The commentator recommended that the wording be changed from "focus more narrowly on principles" to "focus more broadly on principles."
Response	The reviewers disagree, as the proposed revision would remove various sections in the current Principles statement, including extensive discussion on Considerations, and made no change.

Appendix 3

Note: This appendix is provided for informational purposes but is not part of the standard of practice.

Comments on "Actuarial Central Estimate"

During this standard's development, the "actuarial central estimate" concept and definition elicited the most comments of any of the topics covered. The subcommittee believes that the issues raised by this topic are worthy of expanded discussion. The following is meant to provide additional clarity to these key concepts.

This appendix is organized by first providing a background as to the originally proposed wording regarding the actuarial central estimate, followed by a summary of comments received on the actuarial central estimate proposal and subcommittee responses.

Background

The term "actuarial central estimate" was originally created by the subcommittee due to a desire to have a "default" intended measure for the unpaid claim estimate.

The standard requires that the actuary identify (and disclose) the intended measure. The subcommittee had debated whether or not to require disclosure of the estimate's intended measure in all cases, or to allow for a default intended measure.[1] If a default did exist, the subcommittee felt that it needed to allow for many of the traditional actuarial estimation methods. But many traditional actuarial methods do not explicitly define the intended measure that results from their application. Implicitly, they attempt to produce a central estimate[2] of some sort with regard to the distribution of possible outcomes, but the resulting intended measure does not have a well-defined statistical definition. Hence, if the standard were to include a default intended measure, the subcommittee believed that it would have to create a new term and a corresponding definition.

As to the definition of the term, it is generally agreed that most traditional actuarial methods are meant to produce some measure of central tendency. But what measure? There are several different measures of central tendency, including (for example) mean, median, mode, and truncated mean. The subcommittee believed that "mean" best represented the central tendency measure implicitly underlying most traditional actuarial methods, even if such traditional methods are not statistical in nature. (For further discussion, this will be referred to as a "conceptual mean" rather than a "statistical mean.")

Next, the subcommittee considered the issue of whether this conceptual mean is intended to

1 Note that several accounting frameworks use the term "measurement objective" for this concept, rather than "intended measure."

2 Note that "central estimate" does not imply a midpoint. One respondent suggested using the words "medium or intermediate" estimate to avoid any incorrect interpretation that a "central estimate" must be a midpoint.

incorporate the entire range of all possible outcomes. In some lines of business, the subcommittee felt that this would be problematic due to the potential for doomsday and/or systemic shocks in the tail of the distribution. For example, it is doubtful whether any actuarial estimate (stochastic or deterministic) in 1999 considered the liability for Y2K events to the extent they were forecasted at that time. Many of those Y2K-event liability estimates proved to be overly pessimistic, and most financial statement preparers did not incorporate such estimates in their financial statements prior to January 1, 2000. Similarly, estimates of future mass torts that have yet to be identified (for example, "the next asbestos") are generally viewed as not reliably estimable. Hence, the subcommittee felt that requiring that the entire range of all possible outcomes be considered in the estimation of the mean is unrealistic.

In looking for other approaches for dealing with this situation, the subcommittee looked at developments in other parts of the world. The subcommittee found that the term "central estimate" was being used in various locations to describe the intended measure of traditional methods.[3] [4] Initial drafts of this standard also used the same term, but it was eventually decided that the phrase "central estimate" was too generic, with risk of confusion and misinterpretation due to common meanings of the term "central." The subcommittee felt that a new term needed to be developed that conveyed the same concepts but without the same risk of misinterpretation. This led to the term "Actuarial Central Estimate," which was designed to be non-generic, and hence capable of being defined solely by this standard.

As a result of the deliberations discussed above, the subcommittee had developed a rudimentary definition ("conceptual mean," excluding remote or speculative outcomes) and a name for a default intended measure consistent with the desired default. The resulting paragraph in the first exposure draft was as follows:

2.1 *Actuarial Central Estimate—An estimate that represents a mean excluding remote or speculative outcomes that, in the actuary's professional judgment, is neither optimistic nor pessimistic. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This definition is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.*

3 "'Central Estimate': an estimate that contains no deliberate or conscious over or under estimation," from http://www.actuaries.org.nz/publications/PS4%20General%20Insurance.pdf#search=%22central%20estimate%20actuarial%22, September 5, 2006

4 As the recently modified AASB1023 now requires companies to disclose the central estimate of their liabilities (that is the 50% PoS or "best estimate" figure). INFORMATION FOR OBSERVERS, IASB Meeting: 19 April 2005, London, Topic: Insurance Contracts - Education session (Agenda item 3)

Comments and Responses

The comments from this standard's first exposure draft on "actuarial central estimate" and its later usage could generally be grouped into the following five categories:

- Concern with the use of the term "mean" in the "actuarial central estimate" definition, as doing so may imply statistical approaches and distributions regardless of the caveats of such in the proposed definition.
- Concern with the exclusion of "remote or speculative" outcomes in the "actuarial central estimate" definition, as doing so may lead to an estimate biased low (relative to a mean reflecting the entire distribution of possible outcomes).
- Desire for the default to allow for or possibly even promote conservatism.
- Desire that the standard promote statistical techniques.
- Preference for the term "best estimate" over "actuarial central estimate."

As a result of the comments that were received, the subcommittee decided to eliminate the concept of prescribing a default measure since opinions differed widely on what the default measure ought to be. It was felt that requiring the actuary to identify the intended measure in all circumstances allowed the actuary to describe the intended measure in the actuary's own words. However, the subcommittee felt that it was important to have terminology for the measure that results from traditional actuarial methods where the actuary is conceptually aiming for a mean estimate. The subcommittee therefore retained the term "actuarial central estimate," revised the definition and included it as an example of an intended measure in the non-exhaustive list that was provided in section 3.3(a)(1).

More detailed responses to the comments are shown below:

Comment:
Some commentators objected to the use of the term "mean" in the definition of "actuarial central estimate," as they believed that it was impossible to use the term without conveying an implied statistical approach.

Response:
The final definition replaced the term "mean" with "expected value." Additional clarification is provided in 3.3(a)(1), where it states that the "description [of actuarial central estimate] is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean."

Comment:
Some commentators had a concern with the exclusion of "remote or speculative" outcomes in the originally proposed "actuarial central estimate" definition, as they felt that this would lead to estimates that were biased low (relative to a statistical mean reflecting the entire distribution).

Response:
The subcommittee believes that nearly all methods currently in use for estimating unpaid claims, whether stochastic or deterministic, do not reflect all possible outcomes, nor should they necessarily do so. The major concern of the subcommittee in this area are those outcomes where reliable determination of the outcomes' contribution to a mean estimate are so problematic as to be speculative and which are not expected to be normal or recurring on a regular basis. Examples include the Y2K concerns prior to January 1, 2000, and estimates of future mass torts that have yet to be identified (for example, "the next asbestos"). This concern is also limited to those outcomes that could be material to an expected value estimate.

The exposure draft did not and the final standard does not require exclusion of such outcomes in the determination of the unpaid claim estimate, but the subcommittee believes that the actuary should consider whether truly all possible outcomes are included in the actuary's unpaid claim estimate (where the intended measure purports to reflect the entire distribution of possible outcomes). With regard to the "actuarial central estimate" definition, the subcommittee has eliminated the terms "speculative" and "remote," and has replaced them with wording that focused more directly on the concern that reliable estimates of such outcomes cannot be produced.

Comment:
Some commentators were concerned that the "actuarial central estimate" definition precluded the use of conservatism (described in some instances as a margin for adverse deviation) in the unpaid claim estimate intended measure.

Response:
This standard was meant to apply to work done in a variety of situations. In many of those situations, the purpose and/or use of the unpaid claim estimate will dictate whether a margin for adverse deviation is required, allowed or prohibited. The subcommittee does not believe it is the role of the actuary or ASB to dictate a certain singular treatment of margins for adverse deviation for all unpaid claim estimates. In fact, in certain instances the subcommittee believes that the treatment of such in the unpaid claim estimate is clearly not part of the role of the actuary.

The subcommittee also believes that the actuary should clearly disclose the basis of the unpaid claim estimate regarding all the items listed in section 3.3. Hence, in those instances where the unpaid claim estimate includes a margin for adverse deviation, the presence of such margin should be explicitly disclosed.

Comment:
Some of the commentators wanted the standard to advocate only certain techniques for calculating any unpaid claim estimate, regardless of the intended measure. In particular, these comments wanted the standard to dictate the use of stochastic models.

Response:
The subcommittee believes the choice of methodology should be determined by the actuary.

AMERICAN ACADEMY OF ACTUARIES

Council on Professionalism

MATERIALITY

Concepts on Professionalism

Discussion Paper

Prepared by

Task Force on Materiality

PROFESSIONALISM SERIES
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PREFACE

This discussion paper was developed by the Task Force on Materiality of the Council on Professionalism of the American Academy of Actuaries for discretionary use by actuaries. Its purpose is to assist actuaries in considering various aspects of materiality as they provide professional services to their principals. This paper was not promulgated by the Actuarial Standards Board and is not binding upon any actuary. No affirmative obligation is intended to be imposed on any actuary by this paper, nor should such an obligation be inferred from any of the ideas expressed or suggestions made herein. This discussion paper is intended to stand on its own and be freely interpreted.

In considering materiality in one's professional work, actuaries should be guided by the Code of Professional Conduct. To the extent any conflict exists or could be implied between this paper and the Code of Professional Conduct, the Code prevails. Members, reflecting upon the Code and other professional standards that apply to them, are free to accept or reject any part or the whole of this discussion paper as they choose.

Members of the Materiality Task Force represented both the American Academy of Actuaries and the Canadian Institute of Actuaries. We acknowledge the combined efforts of both organizations and their contributions to the research, analysis and composition of the original draft document titled “Materiality.” We recognize that the Academy and the CIA will each use the draft document in whole or in part as they individually develop final documents that address their country-specific approaches to materiality.

Members are encouraged to share their comments on this paper with the Task Force on Materiality to facilitate improvement in any future releases on this topic. Comments can be submitted to **paper@actuary.org**.

JUNE 2006

The Materiality Task Force presents these ideas with the expectation that they will be both useful and thought-provoking and will enhance the actuarial profession’s consideration of aspects of materiality in professional practice. Ultimately, it is the Code of Professional Conduct that governs the responsibilities of actuaries in this area. However, the ideas and suggestions offered in this paper are intended to assist actuaries in applying the Code of Professional Conduct to their individual situations. The Task Force believes that expanded discussion of the concepts and suggestions offered in this paper will benefit the profession.

TASK FORCE ON MATERIALITY
Jacqueline Friedland, Chairperson
Andrea Sweeny *Thomas Custis*
Rick Farrell *Ken Hartwell*
Mike Lombardi *Paul McCrossan*

BACKGROUND

The concept of materiality is central to the reporting and interpretation of financial information. Loosely defined as "importance," the question of whether or not something is "material" means, quite literally, whether or not it matters. When related to financial information, the question of materiality arises in the context of inclusion (whether or not an item needs to be considered), in the context of refinement (whether or not a number is accurate enough to convey its intended message), and in the context of disclosure (whether or not a fact needs to be reported).

Accountants have long recognized the issue of materiality and its role in the reporting of financial information. They have defined the concept in both qualitative and quantitative terms, although judgment, by necessity, plays a significant role as well. However, while the concept of materiality is of no less importance to the actuary's work than it is to the accountant's, and while the term and related concepts are pervasive in the actuarial literature, there is very little guidance for the actuary seeking to evaluate what is and what is not material – what does and does not matter – in a particular situation.

Materiality is a critical element of financial reporting for insurance companies, employee benefit plans and other financial entities to which actuaries provide professional services. Actuaries' clients and employers, as well as other interested persons, may not always understand the differences between materiality from an accounting perspective and materiality as it is understood and used by actuaries. Moreover, actuaries working in different practice areas may address materiality somewhat differently, and the guidance on materiality available to actuaries differs among the various practice areas.

In the United States, there is no Actuarial Standard of Practice (ASOP) devoted to materiality. The word "material" is defined in only two ASOPs (No. 5, Incurred Health and Disability Claims, and No. 17, Expert Testimony by Actuaries), but the term is used in as many as sixteen ASOPs. The *Code of Professional Conduct*, in requiring actuaries to report "material" violations of the Code to the profession's investigative and disciplinary bodies, defines a "material" violation as one that is "important or affects the outcome of a situation, as opposed to a violation that is trivial, does not affect an outcome, or is one merely of form." Where the ASOPs use the word "material," they typically do so in a manner consistent with the definition in the *Code*.

The Actuarial Standards Board considered issuing a separate standard dealing with materiality but ultimately decided not to do so. As a result, the leadership of the American Academy of Actuaries (Academy) determined that it would be helpful to develop a discussion paper offering non-binding guidance on materiality. Therefore, the Academy's Council on Professionalism established the Task Force on Materiality (Task Force) to prepare a discussion paper for broad dissemination to the membership. The purpose of the paper would not be to impose mandatory requirements on actuaries, but to identify issues, enhance awareness, and assist actuaries and others toward a clearer understanding of the topics addressed in this discussion paper.

PURPOSE AND SCOPE

This discussion paper is intended to stimulate thinking and discussion about materiality; the purpose is to not only build upon what has already occurred in the property/casualty practice area but to extend the discussion into other practice areas where there is no current US guidance. The Task Force hopes to promote discussion of materiality within the entire US actuarial profession. We are hopeful that, over time, such discussions might lead to the evolution of generally accepted practices regarding materiality in the U.S.

Concepts in this paper are broadly applicable to all practice areas (life, health, pension, and property/casualty). The considerations set forth here also apply to all actuarial work, including that done by actuaries employed by an insurance company or other entity, as well as by consulting actuaries in assignments for their clients.

This paper is intended to be broadly shared among the membership of the Academy and its sister organizations. The Task Force is not advocating any mandatory practices beyond those required by the Code, the ASOPs, and the Qualification Standards for Prescribed Statements of Actuarial Opinion (Qualification Standards). By sharing the thoughts of several experienced actuaries, the Task Force encourages each actuary to give appropriate consideration to the concepts and suggestions contained in this paper. Ultimately, however, each actuary must decide how to fulfill professional responsibilities in this area.

DEFINING MATERIALITY

Using the various definitions contained in the Appendix at the end of this paper, the Task Force has developed a very generalized description of the concept of materiality:

> An omission, understatement or overstatement in a work product is material if it is likely to affect either the intended principal user's decision-making or the intended principal user's reasonable expectations.[1]

The reader may find it helpful to keep this in mind when reading this discussion paper. Further discussion of the description of materiality appears in the next section, "Reflecting Upon Materiality: The User Is Key."

In understanding what materiality is, it is also important to recognize what materiality is not. The Task Force wishes to emphasize that the concept of materiality is different from the concepts of:

— The range of reasonable values in an actuarial estimate; and
— The inherent uncertainty associated with actuarial estimates.

As explained in the Background section of this paper, there is no ASOP in the United States that is devoted exclusively to materiality. The primary guidance for actuaries in the property/casualty practice area in the United States is the language in section 3.4 of ASOP No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves. This ASOP was effective for statements of actuarial opinion provided for reserves with a valuation date on or after October 15, 2000.

There are grounds for thinking that the advent of this ASOP together with discussions among regulators during and after its promulgation, have affected the way in which property/ casualty actuaries approach the subject of materiality. In a paper to the Casualty Actuarial Society (CAS) titled "Materiality and Statements of Actuarial Opinion" written by Joseph A. Herbers, ACAS, MAAA, we see on page 115 the results of an informal survey the author conducted of insurance regulators, inquiring as to the "materiality threshold commonly used in testing the adequacy of a company's … reserves." Perhaps of more significance is the statement on page 117: "From anecdotal evidence, this author can state that the materiality thresholds used by many practitioners for year-end 2001 . . . were much more narrow than those used previously." [2]

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[1] However, the actuary is not expected to determine "materiality" with respect to user objectives not expressed to the actuary and not reasonably understood by him/her.

[2] Herbers, Joseph A. "Materiality and Statements of Actuarial Opinion". Casualty Actuarial Society Forum 2002 volume: Fall; pages 103 – 138. Available on the CAS website: http://www.casact.org.

Other sources of guidance to which actuaries have access include:

— Actuarial and accounting guidance from other countries or from International Standards on Auditing

— Securities and Exchange Commission

— Financial Accounting Standards Board

— National Association of Insurance Commissioners Financial Examiners' Handbook and Accounting Practices and Procedures Manual

— Valuation, Finance and Investment Committee (VFIC) of the CAS

— Federal and state courts

— Practice Notes

In the Appendix, which begins on page 13, we include a wide range of extracts from relevant literature to assist actuaries in their consideration of materiality standards.

REFLECTING UPON MATERIALITY: USER IS KEY

Although the Task Force has developed a generalized description of what is "material," this discussion paper does not seek to propose a universal definition of materiality for actuarial purposes. We preferred to focus on applying judgment about materiality. We were somewhat startled at the strong emphasis of the Merriam-Webster OnLine dictionary's definition of "material - having real importance or great consequences" – and in particular the word "great." Be that as it may, one immediately responds "to whom?"

User perspective is typically the key element in materiality determinations. In applying judgment to determine how to address materiality, the actuary normally focuses on the purpose of the work and its intended use(s). The definitions in the Appendix at the end of this paper collectively appear to send the message: "know your user." However, this is sometimes more difficult than it may seem, since it is quite common for actuarial work products to be used, in one way or another, by indirect users about whom the actuary cannot possibly be knowledgeable. Indeed, different users (including unintended users) may have different expectations regarding materiality. Although ASOP 41 (discussed below) states that the actuary is not responsible to unintended users with whom they did not intend to communicate, at a minimum, actuaries do retain some responsibility to assure that a report is not misused or misapplied by all users of the work product.

Having decided upon the selected materiality standard for a particular assignment, the actuary might be well advised to test it by asking rhetorically "would my user come to a different conclusion or a different decision if I used some other materiality standard?" Then we immediately encounter the difficulty referred to above, i.e., the actuary cannot possibly be knowledgeable about all indirect users.

One good approach is to use the framework of ASOP No. 41, *Actuarial Communications*, (which is of course binding for actuaries providing services in the U.S.) to resolve this difficulty. Section 2.5 thereof defines "intended audience" as "The persons to whom the actuarial communication is directed and with whom the actuary, *after discussion with the principal* (emphasis added), intends to communicate." The rest of the definition makes it clear that, unless otherwise agreed, the principal is always part of the intended audience, and gives examples of others (such as regulators, policyholders and plan participants) who may be designated by the principal, with consent of the actuary, as members of the intended audience.

Section 2.6 of ASOP No. 41 defines "other user" as "any user of an actuarial communication who is not a principal or member of the intended audience." We believe that using this framework provides valuable protection for the actuary, who is entitled to be in control at all times regarding the intended audience and therefore cannot be taken by surprise by the existence of "other users" about whom the actuary is ignorant. Note too that Section 3.5.2 of ASOP No. 41 provides that there is no obligation for the actuary to communicate with any person other than the intended audience.

Section 3.1.2 of ASOP No. 41 requires the actuary to ensure that the form and content of the actuarial communication are clear and appropriate to the particular circumstances, *taking into account the intended audience* (emphasis added). Consequently, by taking due care as to who is included as part of the intended audience, the actuary is able to apply informed judgment in arriving at the selected materiality standard. For example, if policyholders are included, then the actuary is able to have due regard of the fact that policyholders in general are likely to be less sophisticated than the actuary's principal, regulators or investors.

APPLYING JUDGMENT ABOUT MATERIALITY

"Judgment about materiality pervades virtually all work and affects the application of nearly all standards" (Canadian Institute of Actuaries Standards, Section 1340, Materiality)

The appropriate degree of rigor in establishing or communicating the selected materiality standard for a particular assignment may differ depending upon the needs, skill, sophistication and experience of the intended audience for the actuary's work. The Appendix at the end of this discussion paper contains numerous references to how the selected materiality standard might conceivably affect the user's decision-making or reasonable expectations.

Materiality tends to be more task-specific than practice-specific. For example, we expect there to be more similarities in applying judgment about materiality to valuation type work among the various practice areas (life, health, pension, and property/casualty) than when comparing such judgment as applied to valuation type work and product/rate development work within the same practice area.

Perhaps understandably, in light of regulatory scrutiny and the sophistication of users of work involving mergers and acquisitions, as well as the advent of ASOP 36 as noted previously, actuaries in the U.S. appear to have more experience in applying judgment about materiality in the context of valuation work (used here to include not only statement reserves and merger/acquisition work but also portfolio transfers) than has been the case when setting rates. Nevertheless, the concepts of materiality are also applicable in product/rate development work.

There currently exists a difference in practice among actuaries with respect to the establishment of single or multiple materiality standards. Some actuaries develop a separate materiality level for data which is generally much smaller than the materiality level for the organization in total. For example, an actuary may choose a $25,000 materiality level for data and a $5 million materiality level for the organization's total policy liabilities. The more common practice, however, is the selection of a single materiality standard.

Returning to the user focus and the generalized description of materiality presented on page 7, unless there are good reasons, an actuary would generally select one materiality standard for a particular actuarial task or assignment, and there would not be separate materiality standards identified for data and the overall actuarial analysis. Although it may be appropriate to identify a separate "tolerance level" as a threshold for accuracy and completeness of data, this concept is separate from the matter of materiality and would not normally be referred to or labeled as a selected materiality standard.

In the normal course of events, an actuary generally would not change the materiality standard significantly from year to year or valuation to valuation. However, as an organization approaches a threshold or some external benchmark, an actuary may well choose to consider changing the approach or the degree of rigor applied when determining materiality. For example, if an insurance company is now close to breaching risk-based capital (RBC) action levels, many actuaries would agree that there are likely to be good grounds for changing the selected standard of materiality.

ACCOUNTING VS. ACTUARIAL MATERIALITY

As noted in the "Defining Materiality" section of this discussion paper, an actuary selects an appropriate standard of materiality based on his or her professional judgment as to the magnitude of an omission, understatement or overstatement that would cause the user to reach a different conclusion or follow a different course of action. An accountant or auditor working for the same entity would presumably base his or her selection of the standard of materiality on similar criteria. Some actuaries would argue that, at least in theory, the level of materiality selected by the actuary would normally be equal to or close to that selected by the accountant or auditor.

As a practical matter, however, accountants and auditors may select a materiality level without first communicating with the actuary. For example, auditors of an insurance company attest to the existence and value of assets on the one hand (large numbers that are usually comparable with reserves, at least in the aggregate) and premium data and expenses on the other (which, by contrast, tend to be relatively smaller numbers, especially at the policy or contract level). It may be that auditors do not always use the same level of materiality when making these two attestations.

Good communication between the actuary and the auditor (for which specific guidance is offered in Section 3 of ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Statements for All Practice Areas*) is likely to lead to selection of appropriate materiality levels by both actuary and auditor. If such materiality levels were not the same, the good communication that had taken place would facilitate discussion of any differences with the intended audience.

COMMUNICATION AND DISCLOSURE

Throughout this paper, the focus of the selection of a materiality level has been on the impact on the user. To the extent that a user is likely to understand the meaning and importance of the level of materiality selected for the project, it would normally be in the user's interest to be aware of the materiality level selected and used by the actuary. Accordingly, it seems reasonable that the actuary would usually at least consider some disclosure regarding the materiality level within the actuarial work product.

However, this consideration must also take into account the complexity of the concept of materiality, the potential importance of the concept to the user, as well as the sophistication of the user who will be receiving the work product. In some cases, it may be apparent that any discussion of the standard of materiality is likely to give rise to misunderstanding and confusion. In other cases, full disclosure of the level of materiality selected as well as the rationale behind the selection may be appropriate.

At present neither ASOP No. 36 nor any other ASOP requires disclosure of the selected level of materiality. However, the NAIC Instructions, beginning with the 2004 Statements of Actuarial Opinion (property/casualty insurance companies), require the disclosure of the materiality level. The NAIC Instructions state: "The actuary must identify the materiality standard and the basis for establishing this standard. The materiality standard must be disclosed in $US in Exhibit B: Disclosures."

According to the Canadian Institute of Actuaries (CIA) Standards of Practice 1340 – Materiality, "If practical, the actuary would discuss the standard of materiality with the user. Alternatively, the actuary would report the purpose of the work as precisely as possible, so that the user is warned of the risk of using the work for a different purpose with a more rigorous standard of materiality." This approach will mitigate some of the actuary's concerns towards unintended users who would use different standards of materiality for their respective purposes.

In actuarial work other than a NAIC Actuarial Statement of Opinion, as detailed above, it is currently left to the actuary's professional judgment as to whether disclosure of the materiality level is appropriate for the user's understanding of the actuarial work product, and to determine the nature and scope of appropriate disclosure under the circumstances.

APPENDIX: HELPFUL SOURCES FOR USE IN SELECTING MATERIALITY LEVELS

Peter D. Arthur, CA, CIA Open Forum #21: Unresolved Issues in Standards of Practice

> A misstatement or the aggregate of all misstatements in financial statements is considered to be material if, in the light of surrounding circumstances, it is probable that the decision of a person who is relying on the financial statements and who has a reasonable knowledge of the business and economic activities would be changed or influenced by the misstatement or the aggregate of all misstatements.

ASOP No. 5, Incurred Health and Disability Claims

"Material: resulting in an impact, significant to the interested parties, on the affected actuarial incurred claim estimate."

ASOP No. 17, Expert Testimony by Actuaries

"An item is material if it has an impact on the affected actuarial opinion, which is significant to the interested parties."

ASOP No. 36, Statements of Actuarial Opinion regarding Property/Casualty Loss and Loss Adjustment Expense Reserves

Although the ASOP itself applies only to property/casualty work of a particular kind, Section 3.4 of the ASOP contains some useful ideas for action in all practice areas that actuaries may wish to consider when selecting standards of materiality. The section is reproduced here in full.

> Materiality – In evaluating materiality within the context of a reserve opinion, the actuary should consider the purposes and intended uses for which the actuary prepared the statement of actuarial opinion. The actuary should evaluate materiality based on professional judgment, materiality guidelines or standards applicable to the statement of actuarial opinion and the actuary's intended purpose for the statement of actuarial opinion. The actuary should understand which financial values are usually important to the intended uses of the statement of actuarial opinion and how those financial values are likely to be affected by changes in the reserves and future payments for losses and

loss adjustment expenses. For example, materiality might be evaluated in terms of the specified reserve amount for which an opinion is being given. For a statement of actuarial opinion for an insurance company to be used for financial reporting to insurance regulators, materiality might be evaluated in terms of the company's reported statutory surplus. As another example, for a statement of actuarial opinion to be used for an actuarial appraisal of an insurance company, it might be appropriate to evaluate materiality in terms of both the company's net worth and annual net income, since both values are usually important factors in assessing the value of the company.

ASOP No. 41, Actuarial Communications

2.5 Intended Audience—The persons to whom the actuarial communication is directed and with whom the actuary, after discussion with the principal, intends to communicate. Unless otherwise specifically agreed, the principal is always a member of the intended audience. In addition, other persons or organizations, such as regulators, policyholders, plan participants, investors, or others, may be designated by the principal, with consent of the actuary, as members of the intended audience.

2.6 Other User—Any user of an actuarial communication who is not a principal or member of the intended audience.

3.1.2 Form and Content—The actuary should take appropriate steps to ensure that the form and content of the actuarial communication are clear and appropriate to the particular circumstances, taking into account the intended audience. To accomplish these actuarial communication objectives, the actuary should consider whether such actuarial communication should be made in an actuarial report. Factors to consider in making such a determination include the complexity of the actuarial engagement or assignment; the actuary's perception of the significance of the actuarial findings; and relevant communication guidance in other ASOPs. Information included in previous actuarial communications that are available to the intended audience may be incorporated by reference, by the actuary, into an actuarial communication issued under this standard.

3.5.2 No Obligation to Communicate with Other Users—Nothing in this standard creates an obligation for the actuary to communicate with any person other than the intended audience.

Canadian Institute of Actuaries

Paragraphs .02 through .06 of the Canadian Institute of Actuaries Standards, Section 1340 Materiality provide as follows:

> .02 Judgment about materiality pervades virtually all work and affects the application of nearly all standards. The words "materiality" and "material" seldom appear in the standards, but are understood throughout them. For example, the recommendation that approximation is appropriate if it does not affect the result means that it does not **materially** affect the result.
>
> .03 "Material" has its ordinary meaning, but judged from the point of view of a user, having regard for the purpose of the work. Thus, an omission, understatement, or overstatement is material if the actuary expects it materially to affect either the user's decision making or the user's reasonable expectations. Usually, however, the user does not specify a standard of materiality, so the judgment falls to the actuary. That judgment may be difficult for one or more of these reasons:
>
> > The standard of materiality depends on how the user uses the actuary's work, which the actuary may be unable to foresee. If practical, the actuary would discuss the standard of materiality with the user. Alternatively, the actuary would report the purpose of the work as precisely as possible, so that the user is warned of the risk of using the work for a different purpose with a more rigorous standard of materiality.
> >
> > The standard of materiality may vary among users. The actuary would choose the most rigorous standard of materiality among the users.
> >
> > The standard of materiality may vary among uses. For example, the same accounting calculations may be used for a pension plan's financial statements and the financial statements of its participating employer. The actuary would choose the more rigorous standard of materiality between those two uses.

The standard of materiality depends on the user's reasonable expectations, consistent with the purpose of the work. For example, advice on winding-up a pension plan may affect each participant's share of its assets, so there is a conflict between equity and practicality. Similarly for advice on a policyholder dividend scale.

0.4 The standard of materiality also depends on the work and the entity which is the subject of that work. For example:

A given dollar standard of materiality is more rigorous for a large than for a small entity.

The standard of materiality for valuation of an insurer's policy liabilities is usually more rigorous for those in its financial statements than for those in a forecast in dynamic capital adequacy testing.

The standard of materiality for data is more rigorous for determining an individual benefit (such as in a pension plan wind-up) than for a valuation of a group benefits plan (such as a going-concern valuation of a pension plan's liabilities).

The standard of materiality for work involving a threshold, such as a regulatory capital adequacy requirement calculation of an insurer or a statutory minimum or maximum funding level for a pension plan would become more rigorous as the entity approaches that threshold.

0.5 The actuary would not report an immaterial deviation from a particular recommendation or other guidance in the standards except if doing so assists a user to decide if the standard of materiality is appropriate for that user.

0.6 The recommendation applies to both calculation and reporting standards.

Judicial Application of Materiality Standards

The following excerpts have been selected from a sampling of cases in which the courts have defined materiality in the context of financial statements.

S.E.C. v. Price Waterhouse, 797 F.Supp. 1217, 1237 (S.D.N.Y., 1992).

"Materiality is defined in the accounting literature as '[t]he magnitude of an omission or misstatement of accounting information that, in light of surrounding circumstances, makes it probable that the judgment of a reasonable person would have been changed or influenced by the omission or misstatement.' (citation omitted) While the literature reflects that the 5 to 10 percent range relied on by the Commission is 'useful' (citation omitted), that literature also makes clear that there are no generalized standards for determining the materiality of a particular 'judgment item' (citation omitted), because a materiality decision is a qualitative one requiring consideration by an accountant of a wide range of information factors including, *inter alia*, the nature of the item under consideration; whether it arises from a routine or abnormal transaction; the size of the enterprise; and the company's financial condition and trends in profitability. (citation omitted) Moreover, FAS Con 2 explicitly states that '[m]agnitude by itself, without regard to the nature of the item and the circumstances in which the judgment has to be made, will not generally be a sufficient basis for a materiality judgment.'" (citation omitted)

Delta Holdings, Inc. v. National Distillers and Chemical Corp., 945 F.2d 1226, 1242 (C.A.2 (N.Y.), 1991).

"The applicable legal standard regarding the materiality of omitted information is whether 'there is a substantial likelihood that a reasonable shareholder would consider it important' or 'a substantial likelihood that the disclosure . . . would have been viewed by the reasonable investor as having significantly altered the total mix of information made available.'" (citation omitted)

Hudson v. General Dynamics Corp., 118 F.Supp.2d 226, 249 (Conn., 2000).

"This determination [of materiality] is . . . based on whether there is a substantial likelihood that the misrepresentation would mislead a reasonable employee in making an adequately informed decision about if and when to retire. (citation omitted) [There are] a number of factors to consider when determining materiality, including 'how significantly the statement misrepresents the present status of internal deliberations regarding future plan changes; the special relationship of trust and confidence between the plan fiduciary and beneficiary; whether the employee was aware of other information or statements from the company tending to minimize the importance of the misrepresentation or should have been so aware, taking into consideration the broad trust responsibilities owed by the plan administrator to the employee and the employee's reliance on the plan administrator for truthful information.'" (citation omitted)

FASB Statement of Financial Accounting Concepts No. 2, "Qualitative Characteristics of Accounting Information"

FASB Statement No. 2 generally provides that quantitative and qualitative factors should both be considered when determining materiality. It further states that FASB has long emphasized that materiality cannot be reduced to a numeric formula. "The predominant view is that materiality judgments can properly be made only by those who have all the facts. The Board's present position is that no general standards of materiality could be formulated to take into account all the considerations that enter into an experienced human judgment." Additionally, FASB Statement No. 2 provides that "Magnitude by itself, without regard to the nature of the item and the circumstances in which the judgment has to be made, will not generally be a sufficient basis for a materiality judgment."

* * *

The omission or misstatement of an item in a financial report is material if, in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgment of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item.

International Accounting Standard 1, "Presentation of Financial Statements"

"Omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions of users taken on the basis of the financial statements. Materiality depends on the size and nature of the omission or misstatement judged in the surrounding circumstances. The size or nature of the item, or a combination of both, could be the determining factor."

International Accounting Standards

"Users are assumed to:

— Have a reasonable knowledge of business and economic activities and accounting and a willingness to study the information in the financial statements with reasonable diligence;

— Understand that financial statements are prepared and audited to levels of materiality and that there is a relationship between the level of materiality used and the cost and timing of the audit;

— Recognize the uncertainties in the measurement of amounts based on the use of estimates, judgment and the consideration of future events;

— Make reasonable economic decisions on the basis of the information in the financial statements.

The determination of materiality, therefore, takes into account how users with such characteristics could reasonably be expected to be influenced in making economic decisions.

— When determining materiality in audits of financial statements or other historical financial information, prepared for a special purpose, the auditor considers the needs of specific users in the context of the objective of the engagement.

— Materiality is determined without regard to the degree of inherent uncertainty associated with the measurement of particular items. For example, the fact that the financial statements include very large provisions with a high degree of estimation uncertainty (e.g., provisions for insurance claims in the case of an insurance company, oil rig decommissioning costs in the case of an oil company, or more generally, legal claims against an entity) does not cause the auditor to determine the materiality level for the financial statements to be higher than for financial statements that do not include such inherent estimation uncertainties."

Proposed International Standard on Auditing 320 (Revised)
Materiality in Planning and Performing an Audit

Materiality in the Context of an Audit

5. The auditor's consideration of materiality is a matter of professional judgment, and is affected by the auditor's perception of the financial information needs of users of the financial statements. For the purposes of the audit, the auditor is concerned with misstatements, including omissions, which could reasonably be expected to influence

the economic decisions of users taken on the basis of the financial statements. In this context, it is reasonable for the auditor to assume that users:

(a) Have a reasonable knowledge of business and economic activities and accounting and a willingness to study the information in the financial statements with reasonable diligence;

(b) Understand that financial statements are prepared and audited to levels of materiality;

(c) Recognize the uncertainties inherent in the measurement of amounts based on the use of estimates, judgment and the consideration of future events; and

(d) Make reasonable economic decisions on the basis of the information in the financial statements.

6. Furthermore, the auditor's consideration of materiality is based on the common financial information needs of users as a group; the auditor does not consider the possible effect of misstatements on specific individual users, whose needs may vary widely.

7. Materiality depends on the size and nature of the misstatement judged in the surrounding circumstances. The size or nature of the item, or a combination of both, could be the determining factor.

Use of Benchmarks in Determining Materiality

11. Determining what is material to users of the financial statements requires the exercise of professional judgment. The auditor often applies a percentage to a chosen benchmark as a starting point in determining a materiality level for the financial statements as a whole.

12. When identifying an appropriate benchmark, the auditor has regard to factors such as:

— The elements of the financial statements (e.g., assets, liabilities, equity, income, expenses);

— Whether there are items on which the attention of the users of the particular entity's financial statements tends to be focused (e.g., for the purpose of evaluating financial performance users may tend to focus on profit, revenue or net assets);

— The nature of the entity, where the entity is at in its life cycle, and the industry and economic environment in which the entity operates;

— The size of the entity, nature of its ownership and the way it is financed (e.g., if an entity is financed solely by debt rather than equity, users may put more emphasis on assets, and claims on them, than on the entity's earnings); and

— The relative volatility of the benchmark.

14. Having identified an appropriate benchmark, the auditor identifies relevant financial data to be used in determining materiality. The auditor ordinarily considers prior periods' financial results and financial positions, the period-to-date financial results and financial position, and budgets or forecasts for the current period, taking account of significant changes in the circumstances of the entity (e.g., a significant business acquisition) and relevant changes of conditions in the industry or economic environment in which the entity operates. For example, when the auditor, as a starting point, determines materiality for a particular entity based on a percentage of profit before tax from continuing operations, circumstances that give rise to an exceptional decrease or increase in such profit may lead the auditor to conclude that materiality is more appropriately determined using a normalized profit before tax from continuing operations figure based on past results.

Documentation

26. The auditor should document:

(a) The materiality level for the financial statements as a whole;

(b) The materiality level for a particular class of transactions, account balance or disclosure, if applicable;

(c) The amount (or amounts) determined for purposes of assessing risks of material misstatement and designing further audit procedures;

(d) Any changes made to (a) – (c) as the audit progressed; and

(e) How the amounts in (a) – (d) were determined.

Mary D. Miller, FCAS, MAAA, Actuary Ohio Department of Insurance
"Materiality and the Actuary", Casualty Loss Reserve Seminar, September 2005

Materiality reviewed in relationship to financial values that are important to the intended audience, for example:

— Regulator: statutory surplus; risk based capital; loss, LAE and unearned premium reserves; IRIS tests

— Appraisal: net worth (GAAP); net income; earnings per share

Materiality considerations:

— Single vs. multi-line company
— Net retention
— Single company vs. member of a group
— Access to capital
— Management
— Prior loss reserve runoff
— Financial strength

"Materiality and ASOP No. 36: Considerations for the Practicing Actuary"
CAS Committee on Valuation, Finance, and Investments

"No formula can be developed that will substitute for professional judgment by providing a materiality level for each situation."

Possible quantitative matters that the actuary could consider in the initial phase of determining whether a particular item is material:

— Absolute magnitude of item that represents a correction or a differing result if reviewing the work of others

— Absolute magnitude of item for which data are not available or are incomplete

— Ratio of item to reserves or statutory surplus

— Impact of item on IRIS ratios

— Impact of item on risk-based capital results

— Likelihood or size of potential variation of ultimate actual results from current expectations

— Ratio of item to net income or net worth

— Impact of item on earnings per share

NAIC Financial Examiners Handbook

Planning materiality: starting point is 1% to 5% of surplus.

NAIC Accounting Practices and Procedures Manual

The Codification defines a material omission or misstatement of an item in a statutory financial statement as having a magnitude such that it is probable that the judgment of a reasonable person relying upon the statutory financial statement would be changed or influenced by the inclusion or correction of the item.

— Some items are more important than others and require closer scrutiny. These include items which may put the insurer in danger of breach of covenant or regulatory requirement (such as an RBC trigger), turn a loss into a profit, reverse a downward earning trend, or represent an unusual event.

— The relative size of the judgment item is usually more important than the absolute size. An example for this is a reserve amount that would significantly impact the earnings of a small company but barely impact the earnings of a large company.

— The amount of the deviation of an item that is considered immaterial may increase if the attainable degree of precision decreases.

SEC Staff Accounting Bulletin: No. 99 – Materiality

The relevant portions of this SEC bulletin may be summarized as follows:

— The common practice of using quantitative thresholds as rules of thumb for materiality has no basis in law or accounting literature. Exclusive reliance on certain quantitative benchmarks to assess materiality in preparing financial statements … is inappropriate; misstatements are not immaterial simply because they fall beneath a numerical threshold.

— The use of a percentage as a numerical threshold, such as 5%, may provide the basis for a preliminary assumption regarding materiality. There is no objection to a "rule of thumb" as an initial step in assessing materiality.

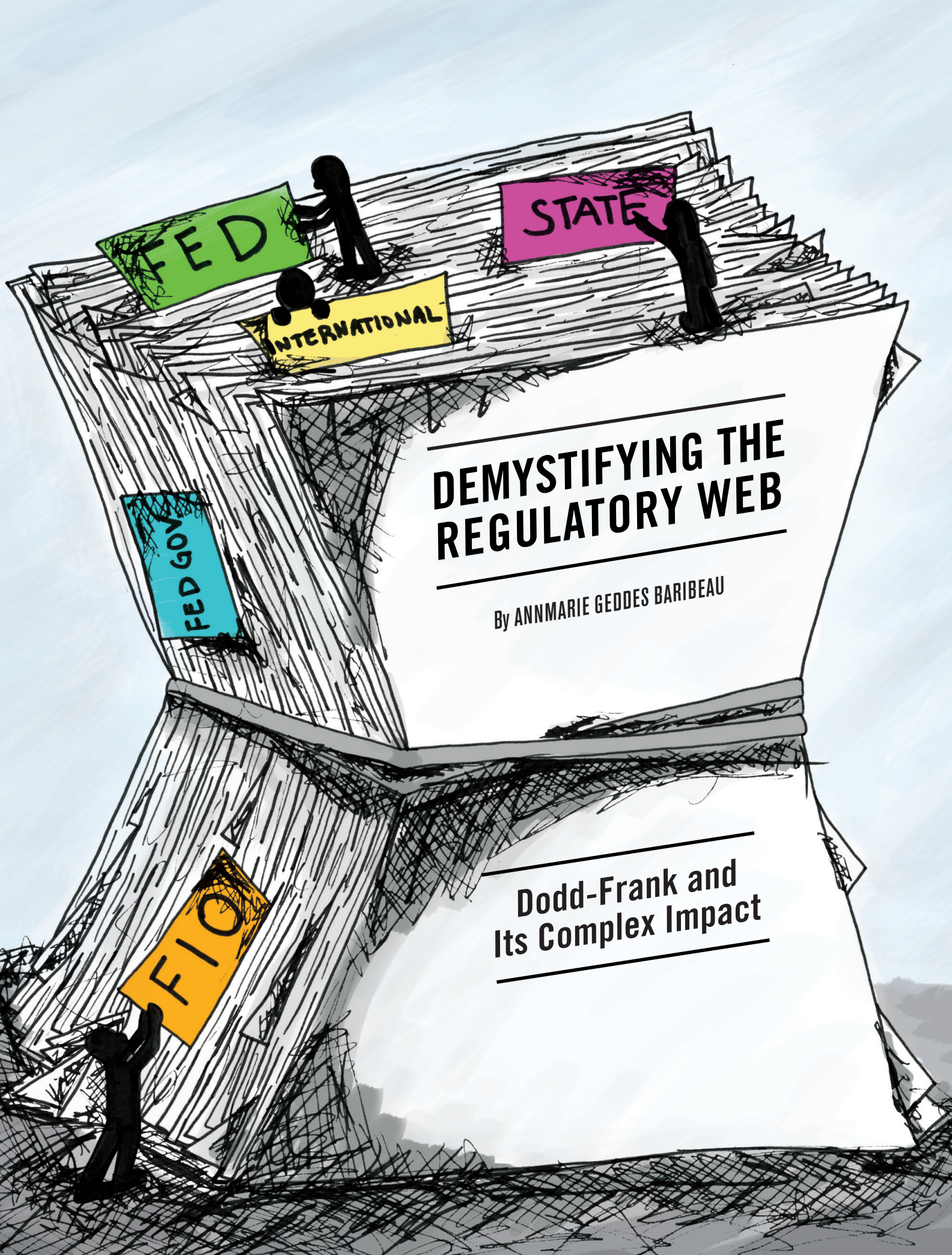
— Both quantitative and qualitative factors should be considered.

— Experienced human judgment is necessary and appropriate.

— An item that is small in absolute magnitude may be important if its inclusion or modification would change someone's conclusion about the basic financial condition of the company.

— Materiality should be considered both separately and in total. An example given considers materiality issues affecting revenues and expenses even though the difference in net income may net out to be small.

A matter is material if there is a substantial likelihood that a reasonable person would consider it important.



DEMYSTIFYING THE REGULATORY WEB

By ANNMARIE GEDDES BARIBEAU

Dodd-Frank and Its Complex Impact

By inserting federal roles between state regulators and international groups, the impact of the Dodd-Frank Act remains unsettling.

Nearly six years ago, President Barack Obama signed the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 into law. As the nation's most expansive federal reach into the traditionally state-regulated insurance industry, Dodd-Frank's impact on property-casualty insurers and the actuaries who serve them continues to unfold.

At first glance, the law sponsored by Sen. Chris Dodd (D-Conn.) and Rep. Barney Frank (D-Mass.) appears to affect a limited number of insurers and their actuaries. There are signs, however, that Dodd-Frank's impact could gradually spread throughout the insurance industry.

The law granted limited regulatory authority to the Federal Reserve System (Fed) and directed the formation of the U.S. Treasury's Federal Insurance Office (FIO) to monitor the industry. By introducing unprecedented insurance federal regulation and policy influence, Dodd-Frank creates a web of ramifications to untangle.

Part of this includes Dodd-Frank authorizing the Fed and the FIO to act on the international insurance policy-making stage. This allows both organizations to influence — and be influenced by— the International Association of Insurance Supervisors (IAIS), where issues were already being largely addressed by state regulators through the National Association of Insurance Commissioners (NAIC).

"Despite its proven track record, the domestic regulatory landscape is being forced into significant changes," stated Rep. Blaine Luetkemeyer (R-Mo.), chairman of the House Financial Services' Housing and Insurance Subcommittee, at the subcommittee's hearing on September 29, 2015, according to an unofficial transcript provided to *Actuarial Review*.

"Today, we see more intrusion in insurance by not only the federal government, but also international financial regulators. Dodd-Frank has allowed that to happen, the integration of the Federal Insurance Office and the powers granted to the Federal Reserve Board of Governors," he noted.

And since the law left many regulatory decisions up to the Fed — an agency that did not historically regulate insurance — rule promulgation for the

Sweeping acts of the U.S. Congress generally occur in response to a significant national problem — and the Dodd-Frank Act is no exception.

insurers it regulates remains a work in progress. Meanwhile, both state regulators and the Fed continue to address similar concerns, such as solvency, on separate tracks with differing approaches, necessitating future harmonization to avoid overlap while both are responding to international pressures.

When the Fed finishes its rules and the IAIS completes its standards, actuaries will be key in addressing the "whole financial element" of these new standards, said David F. Snyder, vice president of international policy for the Property Casualty Insurers Association of America (PCI).

The affected actuaries, said Jim MacGinnitie, senior property-casualty fellow at the American Academy of Actuaries, will likely need to adapt and adjust loss reserving calculations and financial risk management processes.

At the same time, Congress, which monitors the progress of Dodd-Frank and has already passed legislation to adjust it, is considering even more changes.

Genesis

Sweeping acts of the U.S. Congress generally occur in response to a significant national problem — and the Dodd-Frank Act is no exception. "The Dodd-Frank Act was a creature of the 2008 financial crisis," said Robert Hartwig, president of the Insurance Information Institute (III).

At its core, offered John Huff, president of the NAIC and Missouri's insurance commissioner, "The financial crisis was a banking crisis, and the insurance industry generally weathered the storm." So it's unsurprising that Dodd-Frank's inclusion of insurers, and the resulting regulatory burden, remains a point of frustration.

"If we fast forward 10 to 20 years after Dodd-Frank," Hartwig opined, "many of its designers could say the focus on banks was appropriate but will recognize in time that including insurers was not." Instead, he added, "They will probably wish they had included other financial entities such as large hedge funds or other areas where economic risks are building."

Insurers were primarily included in the law, Hartwig said, because the American Insurance Group's (AIG) financial products division, a banking function unrelated to its insurance operations, contributed to the crisis. "AIG is repeatedly used," PCI's Snyder said, "as the main justification for a very broad interpretation of the limited additional authority that was given to the U.S. Treasury's FIO and Fed under Dodd-Frank."

Huff points out that when the financial crisis started, AIG's financial products division was already under federal regulation by the U.S. Treasury's Office of Thrift Supervision (OTS). "The state-regulated insurance subsidiaries were stable and eventually enabled the U.S government to profit on its cash infusion into the company," he added.

Federal Reserve Authority

The United States Constitution's commerce clause gives Congress authority to regulate interstate commerce, which can include insurance. However, for about 150 years, Congress has yielded regulatory authority to the states. With the War Between the States fresh in its memory, the U.S. Supreme Court concluded in 1868 that since insurance was not commerce, Congress did not have the authority to regulate it.

Seventy-six years later, the highest court of the land then recognized insurance as interstate commerce. Nonetheless, the next year Congress passed the McCarran-Ferguson Act of 1945 to preserve states' authority to regulate and tax insurers.

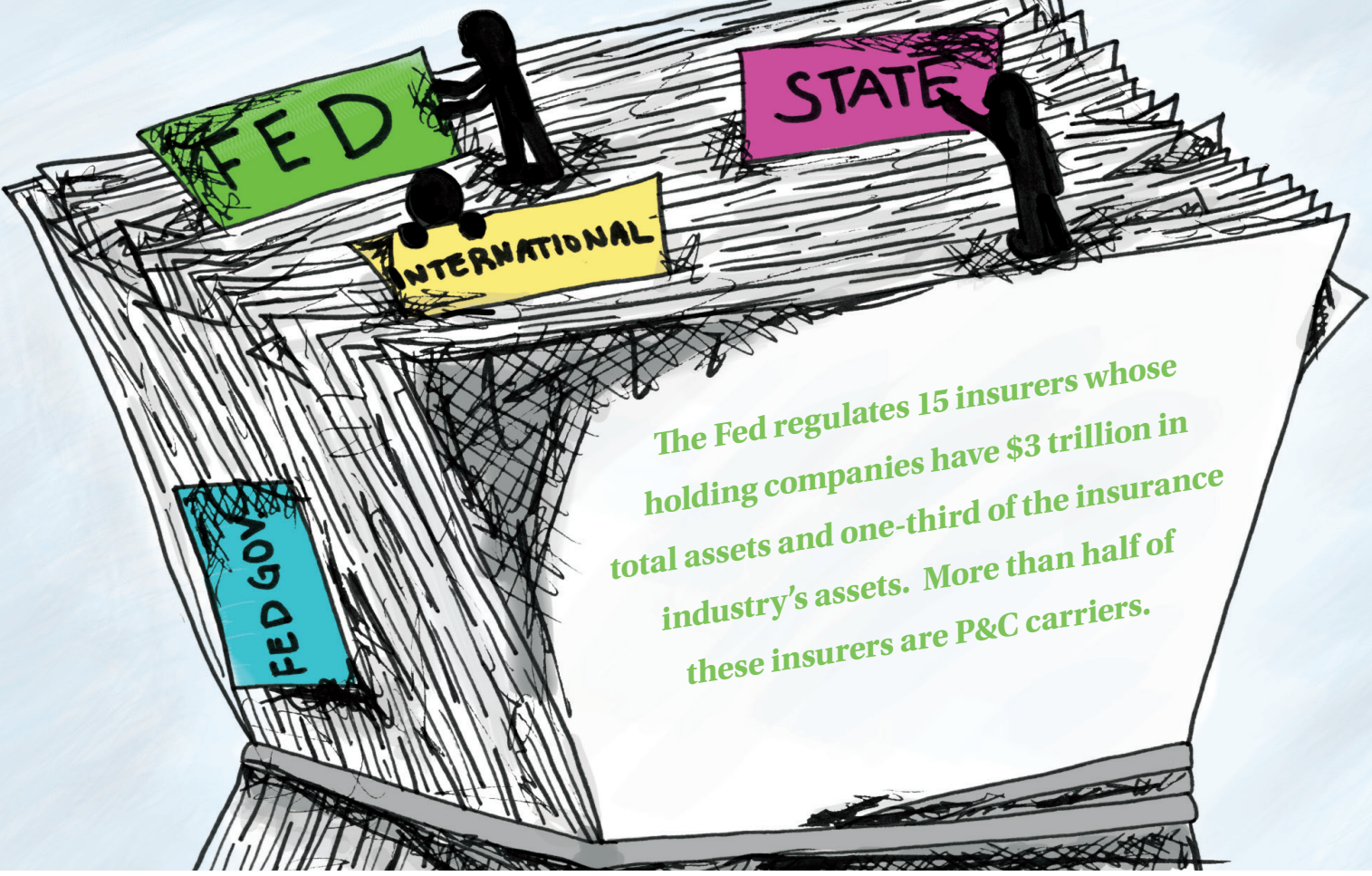
Dodd-Frank's focus on preventing systemic risk in the U.S. economy granted the Fed authority to regulate two types of insurance companies. One group consists of insurers considered to be systemically important financial institutions (SIFIs). The Fed's regulatory responsibility also includes insurance holding companies that have banks or thrifts.

The Financial Stability Oversight Council (FSOC), under the auspices of the U.S. Treasury, assigns a SIFI designation to financial institutions, including insurers, which could cause a national systemic economic disruption if they fail.

Of the three designated insurers, two offer property-casualty insurance —AIG and MetLife — while Prudential is a life insurance company.

The very notion of insurers being designated as SIFIs remains controversial. That's no surprise given the burden of additional regulation, the difference in business models between insurers and banks, and acknowledgement that insurers in general made a minimal contribution to the Great Recession. Further, the process of determining what makes a business a SIFI is "nebulous," Hartwig said. "Neither FSOC nor the Fed have provided a prescription that, if followed, allows insurers to stay off or get off the list," Hartwig maintained.

Roy Woodall, FSOC's independent member with insurance expertise, told the congressional subcommittee last fall



that two insurers (AIG and Prudential) were deemed international SIFIs before FSOC designated them as national SIFIs. "And I really feel like that we've got a situation where the international people have been driving that car," Woodall added.

Woodall also noted in his written testimony that he did not agree with FSOC's decision to designate MetLife and Prudential as SIFIs. MetLife is disputing FSOC's SIFI designation, so that could change.

The Fed also holds regulatory responsibility for insurance holding companies with banks or thrifts. At press time, the Fed regulates 15 insurers whose holding companies have $3 trillion in total assets and one-third of the insurance industry's assets.

More than half of these insurers are P&C carriers. According to a list provided by the Fed, these include State Farm Insurance, Nationwide Mutual Insurance Group, USAA, Auto Club Group, First American Financial Corp., Ohio Farmers Insurance Co., Illinois Farm Bureau and Donegal Insurance Co.

Other insurers, including Northwestern Mutual Life Insurance Co., Prudential Financial, Massachusetts Mutual Financial Group and W.R. Berkley Corp. have either reduced their thrifts to trust banks or divested their thrifts to avoid Fed regulations, according to the 2013 article, "W.R. Berkley Sells Interest in InsurBanc to a Bank He Chairs," at propertycasualty360.com.

The Fed has about 90 full-time equivalent employees supervising these insurers, said Thomas Sullivan, associate director of the Fed's division of banking supervision and regulation, at last September's congressional hearing.

The Fed monitors these insurers through day-to-day supervision to protect consolidated firms' safety and soundness and mitigate financial stability risks, added Sullivan, a former Connecticut state insurance commissioner. Fed supervision, he told the subcommittee, means working with insurers to strengthen their measurement and management of internal controls, corporate governance, and risk identification.

In summary, Fed oversight à la Dodd-Frank means that Fed-regulated insurers must:

- Develop living wills (also known as resolution plans) to be used in the case of bankruptcy.
- Meet liquidity requirements.
- Undergo stress testing.
- Adhere to capital standards.

So far, the Fed has developed standards on living wills and qualitative liquidity requirements, but there is still much work to be done. Quantitative liquidity requirement regulations have not been set. Stress testing will depend on first finishing capital requirement regulations, according to the Fed.

Since the Dodd-Frank Act became law, insurers have been very concerned that they will have to abide by banking-

influenced regulations when their business models are different. The Insurance Capital Standards Clarification Act of 2014, supported by the Fed, answered some of that concern. It removed the Dodd-Frank mandate that Fed-regulated insurers must maintain the same capital standards as banks.

The Fed continues to build its "domestic regulatory capital framework" so it is well tailored to "specific business lines, risk profiles and systemic footprints," Sullivan told the congressional subcommittee.

"The Fed has not yet promulgated the capital standards, and Congress has been after them to move that forward," MacGinnitie said.

During the congressional hearing, Sullivan could not say when domestic capital standards would be ready because the Fed is not being driven by an "artificial timeline." "I don't think this is something we want to hurry or rush along," he said. "I think this is something we want to be very careful and thoughtful and deliberate about."

Of the year 2016, Snyder predicted that it "will be a busy year for developing these standards."

The Fed continues to consider how insurance holding company standards will affect state-based regulation or regulatory initiatives.

While the Fed expresses commitment to working with state insurance commissioners and the NAIC, there is also concern that the Fed is being too sensitive to international interests. "It's imperative that the Fed develop domestic standards first, then export it to the rest of the world," Rep. Luetkemeyer said.

When it comes to understanding the insurance industry, the Fed and FSOC are facing a learning curve. As a new insurance regulator, "The Fed is interested in how the SIFIs, in particular AIG, put their financial statements together," MacGinnitie explained. The Fed also wants to understand the reserving process and how actuarial judgment comes into play, he said.

At the invitation of FSOC's insurance representative, the American Academy of Actuaries has been providing FSOC's insurance industry work group with information about actuaries' role in promoting financial stability and the regulatory capital requirements for U.S. insurers. In December 2015, Academy representatives made two presentations to the work group, one focused on risk-based capital and the U.S. solvency framework, and the other focused on actuarial professionalism and the prominent role that the U.S. actuarial profession plays in ensuring the solvency and stability of domestic financial systems.

Explaining actuarial judgment, and demonstrating that it can be trusted, is perhaps the largest challenge. "It looks like a black box to an outsider, and I think it is fair to say there is

a distrust in black boxes because of the banking experience," MacGinnitie offered.

Since there is a high probability that regulators and insurers regulated by the Fed will want an even playing field, Snyder believes more insurers will see directives increase in the future. "CEO-level executives are understanding this dynamic," Snyder added.

Federal Insurance Office

The FIO serves several functions. To provide insurance information in one place, it assembles insurance data from various organizations including the III and the NAIC. If the FIO desires not-already-collected information, it has the power of subpoena, if necessary, to gather it directly from insurers. "The view was the federal government needed to have its own resource with respect to the insurance industry and previously it had none," Hartwig said.

The agency also monitors the insurance industry in various ways. It identifies insurance activities that could contribute to a broader U.S. financial systemic crisis, develops federal policy regarding nationally or internationally important insurance issues, and consults with state governments on insurance matters. Since its monitoring authority is so broad, Snyder pointed out, the FIO "can monitor almost anything they want and make recommendations."

One specific Dodd-Frank mandate is for the FIO is to monitor the affordability and availability of insurance, with the exception of health care coverage. "My impression is that the net is fairly wide here," MacGinnitie said.

The agency is currently focusing on automobile insurance affordability and availability. It published two requests in the Federal Register to gain industry insight on how to measure affordability and identify appropriate data for this purpose, Snyder said.

Says Hartwig, "The FIO wants to come up with an objective measure, but any such measure will be inherently arbitrary." For example, one approach under consideration is to define auto insurance as affordable if it accounts for two percent or less of a person's income, he added.

Snyder offered that the PCI approach to affordability is that it should be the function of how much a person has to pay for car insurance after essentials such as food and housing are covered. "With this approach, we believe auto insurance is affordable for everyone," he said.

Insurance commissioners, however, are already sensitive to affordability, availability and rating issues, MacGinnitie said. Such issues came up with credit scoring more than a decade ago and now with pricing optimization (see "Pricing Optimization and the Descending Confusion," *AR* September/October 2015.).

Regardless, MacGinnitie believes that the insurance industry will adapt as it did when the U.S. Supreme Court upheld a nontraditional definition of marriage. He expects more public dialogue about this in the future since Insurance Services Office Ltd. data show that auto insurance claim frequency and severity are increasing. This will probably lead to higher prices and perhaps draw more attention to affordability, availability and rating practices.

In the section on underwriting fairness in FIO's 2015 annual report, the office encourages states to reconsider gender as a factor for rating and underwriting, which can also complicate auto insurance applications for transgender individuals. Further, the FIO also encourages states to reconsider the marriage factor in premiums, which might not be fair to unmarried persons.

Another FIO responsibility is to work with the U.S. Trade Representative to negotiate covered agreements with foreign regulators that could alter state law, Snyder stated. For example, he pointed out that the FIO is developing a covered agreement for reinsurers and insurers in the U.S. to ensure that the country's requirements are deemed equivalent to those in the European Union (EU). The goal is to ensure that American companies are treated equally in the market and to address the EU's concerns regarding reinsurance collateral.

"This is the one area where the FIO has regulatory authority and can actually preempt state laws," Snyder emphasized. It is also an example of where the federal government is moving on a parallel track with state insurance regulators towards the same goal.

The NAIC has already been changing relevant provisions of its Credit for Reinsurance Model Regulation, which would reduce insurance collateral for reinsurers with a solid financial statement domiciled in a country with a solid regulatory environment, Snyder said.

At the congressional subcommittee hearing, Huff of the NAIC expressed concern that FIO could "unnecessarily" preempt state laws and insurance commissioners' progress on reinsurance reforms.

"We question whether a covered agreement or any formal

Top Actuarial Concerns from Dodd-Frank

The Dodd-Frank Act will affect actuaries in several ways, according to the SimErgy Consulting report, "Regulatory Risk and North American Insurance Organizations: A Company Perspective." The Casualty Actuarial Society, Canadian Institute of Actuaries and the Society of Actuaries sponsored the report, which was issued in February 2015. In the table below, Jim MacGinnitie, senior property-casualty fellow at the American Academy of Actuaries, identifies some of the most significant effects that Dodd-Frank will have upon P&C actuaries, based on the report.

Excerpt of "Appendix B: U.S. Research Study — Key Regulatory-Related Risks — Ranked by P&C Score"*

Theme	Risk Scenario	Average Likelihood (Over the next three years)†	Average P&C Severity (Loss in P&C Business Value)‡
Dual Regulation	Dual regulation (at state and federal level) results in new accounting and solvency standards emerging that create an inconsistent and non-level playing field in the insurance market.	6.5%	3.1%
Dual Regulation	Insurance industry becomes subject to a federal regulatory body (e.g., Securities and Exchange Commission) in addition to state regulation, resulting in regulations that are overly restrictive and more expensive to comply with.	4.8%	4.2%
Increase in Capital Requirements	Capital requirements (either issued by the International Association of Insurance Supervisors (IAIS), Federal Insurance Office, or other entity) increase by 20 percent.	3.1%	4.9%
Standardization Requirements Drive Commoditization	Federal Insurance Office unexpectedly succeeds in pressuring states to adopt standardized property-casualty forms, rate classifications or rates, commoditizing products and reducing competitive advantages and profit margins.	1.8%	7.8%
Dodd-Frank Regulation of Banks	Dodd-Frank further expands regulations on banks, resulting in significant increase to compliance costs for insurers that have banks within their organizational structure.	9.9%	1.8%

* https://www.casact.org/cms/pdf/NAAC_Reg_Risk_Research-FINAL.pdf
† As of February 2015
‡ The loss to the portion of company value attributable to the P&C business, which includes auto, homeowners, etc.

action by the federal government is necessary to resolve equivalence as it is clear that recognition can be achieved through other mechanisms," he said, adding that he expects the FIO to work with state insurance commissioners "to ensure our state regulatory system is not compromised."

International Concerns

Balancing United States insurer and consumer interests with international concerns, which was once funneled purely through state regulators through the NAIC, now has two additional intermediaries.

Dodd-Frank in essence sets up the conditions whereby the Fed and the FIO can be part of the international insurance standard-setting process by participating at the IAIS as the NAIC historically has. Federal representation introduces nuances that can affect how insurance regulations will look for insurers in the United States.

The Fed, FIO and NAIC — called "Team U.S.A." —have different missions and goals, which sometimes causes a collision of regulatory and policy approaches, sources say.

Since the Fed is deeply involved in international banking standards, Snyder sees the need to make sure it does not apply international banking concepts that might not be good for the insurers the Fed regulates.

The FIO has nary a regulatory role, but its impact on national and international regulation continues to grow. While FIO's regulatory power in ensuring U.S. insurers have international equivalence is a very limited de jure role, FIO's expansion in the policy arena is giving the agency a greater de facto power that goes beyond what most people thought the Congress intended in Dodd-Frank, Snyder explained.

The implications signal more than a mere turf battle, but could slowly shift the nation's state regulatory foundation and traditional international role.

Advocates in favor of federal regulation point to greater consistency in domestic and international standards. However, federal processes have not shown themselves to be as transparent as those of state insurance regulators, Snyder emphasized.

For example, the FIO is not adopting the NAIC's traditional transparent and open public approach to regulation, Snyder stressed. This transparency is intended to ensure protection of consumers and insurers. Instead, the FIO voted for closed-door procedures and eliminated observer participation in working groups, he added. "So you have a clash of regulatory culture, the one being closed door and the other being more open," Snyder added.

At the same time, the international community is pressuring the U.S. to grow its regulatory role due to deficiencies it sees in the state-based regulatory approach. "International banking bodies, such as the International Monetary Fund, advocate more centralized authority at the United States, which would give the federal government more regulatory power," Snyder explained.

The Treasury often advocates for more federal insurance regulatory authority by identifying opportunities for it, Snyder said. The news release announcing its 2013 report, "How to Modernize and Improve the System of Insurance Regulation in the United States," said that the report recommends a "hybrid" model for insurance regulation.

If the resulting international standards do not reflect current state-based regulation, Snyder speculated that there could be less product innovation, higher costs and fewer options for consumers. "The European top-down approach to regulation, if adopted here, could force insurers to consolidate, leaving fewer insurance options and ironically, creating larger insurers that could become systemically important," he said.

State regulators face higher accountability because they are elected or appointed by the state governor, Snyder said. "More accountable state regulation did much better," he maintained. Federal regulators are accountable to Congress, he said, but oversight has been challenging.

Conclusion

Assuring solvency is one of the most important roles actuaries play in the insurance industry. Since Dodd-Frank gave federal agencies regulatory and policy influence, actuaries have a greater role to play in educating federal officials. How state and federal regulations — along with international standards —will look is unclear, but property-casualty actuaries should keep up with state, federal and international activity to prepare for the future. ●

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Reinsurance Accounting & Strategy for the Actuary

Derek Cedar, FCAS, CERA & Andrew Thompson, FCAS

January 2020

From its roots in ancient shipping to contemporary applications within the financial system – reinsurance continues to evolve. In spite of significant innovation, the theme remains the same: reinsurance enables insurers to take risk, satisfying internal and external constraints. In this paper, we provide a foundational discussion of the functions and financial implications of reinsurance. Throughout the discussion, we provide examples of the accounting treatment of reinsurance transactions on an array of financial statements. Understanding the accounting impact of reinsurance decisions is important, but true strategic decision-making requires a deeper understanding of the legal, regulatory, economic, tax and financial impacts. While not exhaustive, this paper aims to lay a solid foundation for more robust actuarial dialogue regarding reinsurance transactions and the impact to key financial metrics.

Keywords: Reinsurance, Accounting, Actuarial, Retroactive Reinsurance

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Introduction

On May 5th, 1842, a small fire began to smolder inside a local cigar factory on the outskirts of Hamburg, Germany. Three days later over one third of the city had burned. Although the town had established a *City Fire Fund* to handle such an event, the primary insurance market was not adequately able to cope with the severity of the blaze. From its ashes emerged the first dedicated reinsurance company, Cologne Re. Cologne Re was established to protect against catastrophic risk, a key function the reinsurance market serves to this day.

In the following nine sections we discuss catastrophic risk and eight other roles reinsurance plays in the insurance marketplace today. We examine the individual functions by working through real world business issues and corresponding reinsurance solutions. Along the way we highlight the accounting impact of each solution to financial statements and metrics. Throughout, we shed light on strategic considerations regarding reinsurance programs.

Nine Functions of Reinsurance

1. Large Line Capacity

Business Issue: An attractive opportunity to underwrite high value properties is presented, but underwriting authority / risk appetite is $100 million for a single policy.

Reinsurance Solution: The company purchases per-risk insurance to limit individual account exposure.

Large line capacity is an insurer's maximum appetite for assuming risk on a **single insurance policy or location**. In this case, underwriting guidelines state no single risk is to exceed $100 million in net loss exposure. Such internal thresholds are designed to prevent individual accounts from exposing the company to outsized, standalone risk. To address this concern, an insurance company may purchase per-risk reinsurance, in some cases ceding a large portion of each contract. This simultaneously satisfies market demand for coverage while maintaining internal underwriting standards.

The potential impact of implementing such a strategy can be illustrated by comparing the statutory statement of earnings under two scenarios shown below. In Scenario A, the company declines to insure any individual risks exceeding their individual risk appetite of $100 million. In Scenario B, the company writes these large accounts and then purchases reinsurance to limit their retained net exposure on each risk, allowing the company to increase written premium without violating underwriting controls.

Assumptions:

1) *Writing large risks results in a 50% increase to earned premium, $10 million → $15 million*
2) *Ceded premium for reinsurance is 40% of incremental earned premium ($2 million)*
3) *The gross loss ratio is assumed to be 55% in both scenarios*
4) *The ceded loss ratio is 47.5%.*
5) *Only the variable component of other underwriting expenses scales proportionally with the premium growth. Fixed expenses are $2 million.*
6) *Investment income increases as a result of greater premiums earned*

Exhibit 1: The Insurance Company Statutory Statement of Income ($ thousands)

Line	Description	Scenario A	Scenario B Gross	Scenario B Ceded	Scenario B Net	Difference Scenario B vs. A
1.	Premiums earned[1,2]	**10,000**	15,000	2,000	**13,000**	**3,000**
2.	Losses incurred[3]	**4,950**	7,425	855	**6,570**	**1,620**
3.	Loss adjustment expenses incurred[3,4]	**550**	825	95	**730**	**180**
4.	Other underwriting expenses incurred[5]	**4,500**	5,750	-	**5,750**	**1,250**
8.	Underwriting income	**-**	1,000	1,050	**(50)**	**(50)**
11.	Investment income[6]	**1,000**	1,150	-	**1,150**	**150**
16.	Net income before income tax	**1,000**	2,150	1,050	**1,100**	**100**
19.	Federal and foreign income taxes incurred	**210**	231	-	**231**	**21**
20.	Net income	**790**	1,919	1,050	**869**	**79**

Increase in net income due to reinsurance strategy: 10.0%

Exhibit 2: The Insurance Company Loss, Expense and Combined Ratios

	Scenario A	Scenario B	Difference
Gross Loss Ratio	**55.0%**	**55.0%**	**0.0%**
Net Loss Ratio	**55.0%**	**56.2%**	**1.2%**
Ceded Loss Ratio	**-**	**47.5%**	**-**
Gross Expense Ratio	**45.0%**	**38.3%**	**-6.7%**
Net Expense Ratio	**45.0%**	**44.2%**	**-0.8%**
Ceded Expense Ratio	**-**	**N/A**	**-**
Gross Combined Ratio	**100.0%**	**93.3%**	**-6.7%**
Net Combined Ratio	**100.0%**	**100.4%**	**0.4%**
Ceded Combined Ratio		**N/A**	**-**

Observe that the loss ratio and expense ratio are lower on a gross basis than net for Scenario B. The ceded loss ratio (47.5%) is lower than the gross loss ratio for the ceding company (55%). This is common in excess of loss reinsurance treaties, where the reinsurer is typically assuming the riskier layers of business from the ceding company. As a result, the net loss ratio in scenario B is worse. Similarly, the company's net expense ratio, after ceding premium for reinsurance, is worse than its gross expense ratio (44.2% versus 38.3%). However, a comparison of the key accounting entries shows that while the insurer does cede considerable reinsurance premium and profit, there is additional expected net income associated with the growth of the business. Importantly, no growth would have been possible without reinsurance to cover high value property limits.

It is worth noting that there are risks associated with entering into any reinsurance transaction. These risks include: reinsurer credit risk (i.e. default risk), claim dispute risk, liquidity risk (slow-paying risk), affordability risk due to changes in reinsurance pricing, as well as availability risk if there is a shortfall in the supply of reinsurance capacity in the market. Although the risks associated with reinsurance are discussed in the context of capacity reinsurance, they apply to all reinsurance examples discussed in subsequent sections. As a result, insurance companies should consider the financial strength, reputation, and diversity of the reinsurers they utilize. When the primary insurers' ability to pay gross claims is in question, contract provisions such as prompt payments to the cedant should be considered as well.

2. Catastrophic Risk Protection

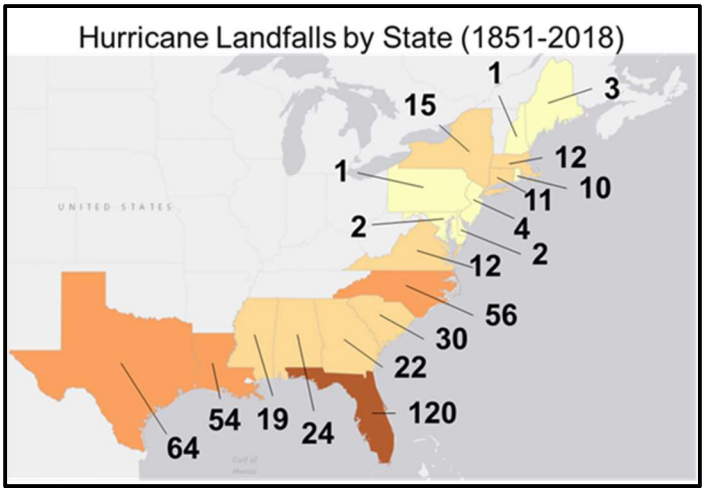
Natural disasters such as hurricanes, earthquakes, tornados, and wildfires can cause damage to large numbers of insureds simultaneously. These risks pose a significant threat to the financial solvency and earnings stability of property and casualty insurance companies. Companies with significant exposure must manage the potential for catastrophic single events and the accumulation of multiple large events.

Business Issue: A company writes 10 billon of property insurance along the coast of Florida. One large hurricane could cause the company to become insolvent.

From June through November, properties in Florida are exposed to the possibility of severe seasonal weather. In recorded history, 120 Atlantic hurricanes directly hit the state, causing significant insurable damage.[1]

[1] Landsea, Chris, NOAA, June 19, 2019, www.aoml.noaa.gov/hrd/tcfaq/E19.html

Exhibit 3: Hurricane Landfalls by State



Reinsurance Solution: The company purchases an annual aggregate excess of loss treaty covering losses arising from hurricanes.

The treaty includes the following features:

➢ Per-Occurrence Deductible:	$500 million
➢ Annual Aggregate Deductible:	$2 billion
➢ Annual Limit:	$9 billion
➢ Covered Peril:	Hurricane
➢ Cost:	$1.5 billion
➢ Coverage Period:	Annual policy beginning on January 1st

This treaty's $500 million per-occurrence deductible means the company is responsible for the first $500 million of loss arising from each and every hurricane. This feature reduces the cost of the reinsurance treaty as the company will retain losses from more frequent, less severe events. The $2 billion annual aggregate deductible represents the amount of loss, in excess of the per-occurrence deductible, that the company is responsible for retaining annually before coverage kicks in. If annual hurricane losses exhaust both deductibles, the treaty will cover losses up to the $9 billion limit.

We will evaluate this contract by analyzing the statutory surplus position on the balance sheet, at the end of the next calendar year, under three alternative hurricane seasons (high versus medium versus low severity seasons). We isolate the balance sheet impact of reinsurance by introducing a ceded adjustment column. In practice, only the net column exists on a statutory balance sheet. The hurricane loss experience and reinsurance recoveries for the high severity hurricane loss scenario are as follows:

Exhibit 4: Hurricane Loss Experience and Reinsurance Recoveries [High] ($ millions)

High Hurricane Season

	Gross	Per-Occurrence Deductible	Net of Per Occurrence	
Hurricane 1	5,000	500	4,500	
Hurricane 2	1,000	500	500	
Hurricane 3	4,000	500	3,500	
	10,000	1,500	8,500	
			2,000	<-- Annual Aggregate Deductible
			6,500	<-- Reinsurance Recoverables
			3,500	<-- Net Loss

Assumptions:

1) *The primary company has paid all direct losses from the first hurricane, i.e. $5 billion in this scenario, but has yet to be reimbursed by the reinsurance counterparty as of year-end.*
2) *No losses have been paid on hurricanes 2 and 3 on either a direct or ceded basis.*

Exhibit 5: The Insurance Company Statutory Balance Sheet [High] ($ millions)

Statutory Balance Sheet (as of year-end)		Net [No Events]	Gross [w/ Events]	Ceded Adjustment [w/ Events]	Net [w/ Events]
Assets					
12.	Cash and invested assets	37,000	32,000	(1,500)	30,500
16.1	Amounts recoverable from reinsurers	0	0	2,500	2,500
28.	**Total Assets**	**37,000**	**32,000**	**1,000**	**33,000**
Liabilities, Surplus, and Other Funds					
1.,3.	Losses and loss adjustment expense	15,000	20,000	(4,000)	16,000
9.	Unearned premiums	7,000	7,000	0	7,000
28.	**Total Liabilities**	**22,000**	**27,000**	**(4,000)**	**23,000**
37.	**Surplus as regards policyholders**	**15,000**	**5,000**	**5,000**	**10,000**

We discuss four of the statutory balance sheet lines impacted by the hurricane loss experience and reinsurance contract:

Assets

I. Cash and Invested Assets

The cost of the reinsurance contract reduces the company's assets by $1.5 billion. In addition, the company paid $5 billion in direct loss for the first hurricane, further reducing assets.

II. Amounts Recoverable from Reinsurers

Reinsurance recoverables on losses **paid** by the primary company but not yet recovered from the reinsurer shall be accounted for as an asset. The asset amount is established by first taking the amount **paid to date** for all hurricanes ($5 billion) net of the per-occurrence deductible of $500 million. The annual aggregate deductible of $2 billion is then applied to the remaining $4.5 billion of contributing loss, resulting in an asset of $2.5 billion on the balance sheet.[2]

Liabilities

III. Losses and Loss Adjustment Expense (LAE)

The remaining $5 billion of unpaid direct losses from hurricanes 2 and 3 are first added to the reserves. Reinsurance recoverables on **unpaid** case and IBNR (Incurred but not reported) loss and LAE reserves shall then be netted against their equivalent gross liabilities. In this case, the remaining $4 billion of expected ceded recoverables from hurricanes 2 and 3 are subtracted from the gross reserves.

IV. Unearned Premiums

No ceded unearned premium liability exists at year-end since the January 1st contract is fully earned after twelve months.

The hurricane loss experience and reinsurance recoveries for the low and medium severity hurricane loss scenarios are as follows:

Exhibit 6: Hurricane Loss Experience and Reinsurance Recoveries [Low] ($ millions)

Low Hurricane Season

	Gross	Per-Occurrence Deductible	Net of Per Occurrence	
Hurricane 1	2,000	500	1,500	
Hurricane 2	0	0	0	
Hurricane 3	0	0	0	
	2,000	500	1,500	
			2,000	<-- Annual Aggregate Deductible
			0	<-- Reinsurance Recoverables
			2,000	<-- Net Loss

[2] If there are collectability issues with the reinsurer, the amount would be accounted for separately when computing the Provision for Reinsurance within Schedule F.

Exhibit 7: Hurricane Loss Experience and Reinsurance Recoveries [Medium] ($ millions)

Medium Hurricane Season

	Gross	Per-Occurrence Deductible	Net of Per Occurrence	
Hurricane 1	1,000	500	500	Gross paid in full by YE
Hurricane 2	500	500	0	
Hurricane 3	3,600	500	3,100	
	5,100	1,500	3,600	
			2,000	<-- Annual Aggregate Deductible
			1,600	<-- Reinsurance Recoverables
			3,500	<-- Net Loss

Assumptions (both scenarios):

1) *The primary company has paid all direct losses from the first hurricane but has yet to be reimbursed by the reinsurance counterparty as of year-end.*
2) *No losses have been paid on hurricanes 2 and 3 on either a direct or ceded basis.*

The tables below summarize the hurricane loss experience and statutory surplus position for each alternative hurricane season.[3] Without this protection, the surplus at year-end would range from $13 billion in the low hurricane year to only $5 billion in the high hurricane year presented above. The key takeaway: when weather does strike, reinsurance can significantly mitigate large drops in statutory surplus. Without reinsurance, this company may not have enough operating capital to write new business and could require capital infusion to maintain sound leverage ratios.

Exhibit 8: Gross, Ceded, and Net Hurricane Losses ($ millions)

Hurricane Losses ($ millions)

	Low	Medium	High
Gross	$2,000	$5,100	$10,000
Ceded	–	$1,600	$6,500
Net	$2,000	$3,500	$3,500

Exhibit 9: The Insurance Company Statutory Surplus ($ millions)

Statutory Surplus at Year End ($ millions)

	Low	Medium	High
Without Reinsurance	$13,000	$9,900	$5,000
With Reinsurance	$11,500	$10,000	$10,000

[3] Additional financial details for the low and medium scenarios may be found in the appendix.

This is an admittedly simplified case study that contemplates only three weather seasons, one reinsurance structure and one financial metric. In practice, companies rely on sophisticated models that can generate millions of potential hurricane seasons. Companies use this robust information to evaluate many different scenarios and optimize their reinsurance structures accordingly. Given the tangible threat posed to companies' balance sheets, reinsurance plays a significant role in the global catastrophe insurance market.

3. Surplus Relief / Capital Efficiencies

Each insurance company is required by its applicable regulators and rating agencies to maintain a certain level of surplus to support its business operations and maintain desired financial ratings.[4] For example, regulators establish minimum capital requirements with a focus on the protection of policyholders. Rating agencies, on the other hand, focus on capital adequacy to evaluate the relative safety from a credit or investment perspective.

An insurance company lacking adequate surplus to support its business may decide to raise additional capital through the issuance of stock or debt, with the exact option(s) available being a function of its corporate structure (e.g. stock vs mutual).[5] Alternatively, an insurance company could directly decrease the amount of capital required. By buying reinsurance, a company can reduce its net exposure to loss and lower its surplus requirement. The purchase of reinsurance can be thought of as an insurer's decision to use reinsurers' surplus to underwrite a portion of risk.

Business Issue: A publicly traded insurance company wishes to optimize the cost of obtaining the capital required to write a certain insurance policy.

Reinsurance Solution: The company can consider the cost of various combinations of stock, bonds, and reinsurance in an effort to improve its cost of capital.

An insurer considering the use of reinsurance must consider and balance several opposing forces. For example, although ceding risk generally decreases an insurer's **required** surplus, the cost of reinsurance also decreases the insurer's **available** surplus to meet policyholder obligations. In addition, the purchase of reinsurance from poorly rated and/or poorly capitalized reinsurance carriers exposes the primary insurer to additional risk. The reinsurer may not pay or be able to pay the ceded losses given an event, increasing the amount of surplus a company must hold.

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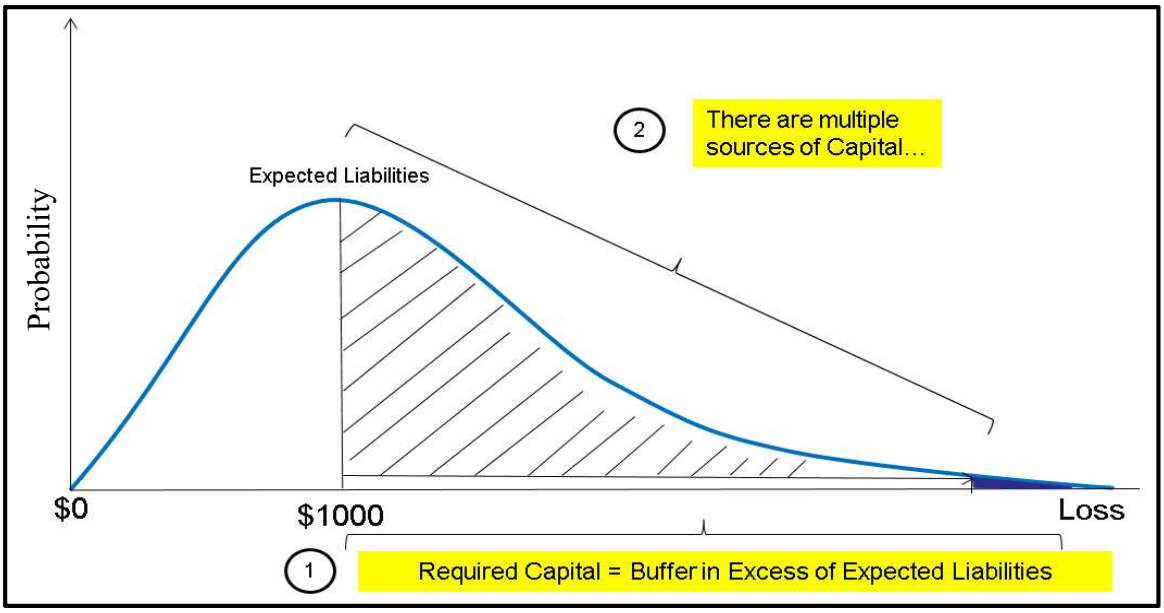
[4] **NAIC** [US]: Risk-Based Capital [RBC], IRIS Ratios; **A.M. Best**: (Stochastic) Best's Capital Adequacy Ratio [(Stochastic) BCAR]; **Standard and Poor's**: S&P Capital Adequacy Ratio [CAR]; **Moody's Investor Service**: Moody's P&C Risk Adjusted Capital Model [MRAC]; **OSFI** [Canada]: Minimum Capital Test [MCT], DCAT, Capital Adequacy Requirements [CAR]; **European Regulators**: Solvency II; **International Standard** [TBD]

[5] A description of such options is beyond the scope of this paper.

Exhibit 10: Probability Distribution of Loss for Single Insurance Policy



Single policy assumptions:

Expected loss: $1,000

Premium charged: $1,200

Net Investment Income [NII] = $0

No expenses associated with issuing or maintaining the policy…

Required economic capital: $2,700

Target return on equity capital: 12%

Coupon on debt capital: 4%

Target debt to equity ratio: 25%

Exhibit 11: Sources of Capital for Publicly Traded Company [Illustrative]

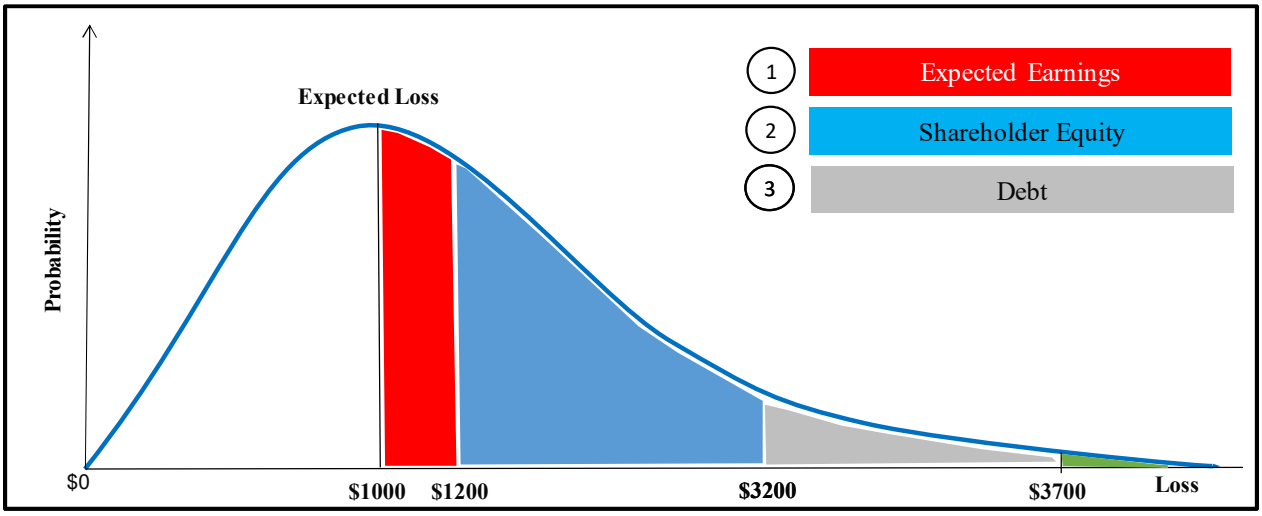


Exhibit 12: Cost of Capital, without Reinsurance

Option #1 - No Reinsurance

Capital Source	$ Amount	% Cost	$ Cost
Expected Earnings	200	0%	-
Equity	2,000	12%	240
Debt	500	4%	20
Reinsurance	-	0%	-
Weighted Average	2,700	**9.6%**	260

(1) The first source of capital comes from the expected earnings loaded into the premium paid by the policyholder. Embedded in the premium is an implicit margin or underwriting profit. The company charged the policyholder $1,200, leaving an expected $200 cushion above the expected loss of $1,000 to cover some adverse deviation.[6]

(2) / (3) The remaining required economic capital of $2,500 is then split proportionally between shareholder equity and corporate debt based on a targeted debt to equity ratio of 25%.[7] Importantly, debt providers will only suffer a loss **after** the shareholder equity has been depleted. Debt holders' lower expected loss is compensated with a lower expected return. The cost of capital associated with writing this policy is $260.

Alternatively, via reinsurance, the primary company can indirectly substitute its own equity and debt capital with that of the reinsurers, hopefully at a lower cost.

Additional assumptions regarding reinsurance:

Reinsurance Premium: $45

Expected Ceded Loss: $15

Reinsurance Ceded Profit / Cost = $45- $15 = $30

Economic Capital Reduction: $500 implies net economic capital need is $2,200

[6] In this example we ignore investment income earned on the premium itself. In practice, this can be a significant financial item, particularly for long-tailed lines of business.

[7] To clarify, this implies 20% of the remaining capital is provided with debt issuance and 80% is equity financed.

Exhibit 13: Sources of Capital, including Reinsurance [Illustrative]

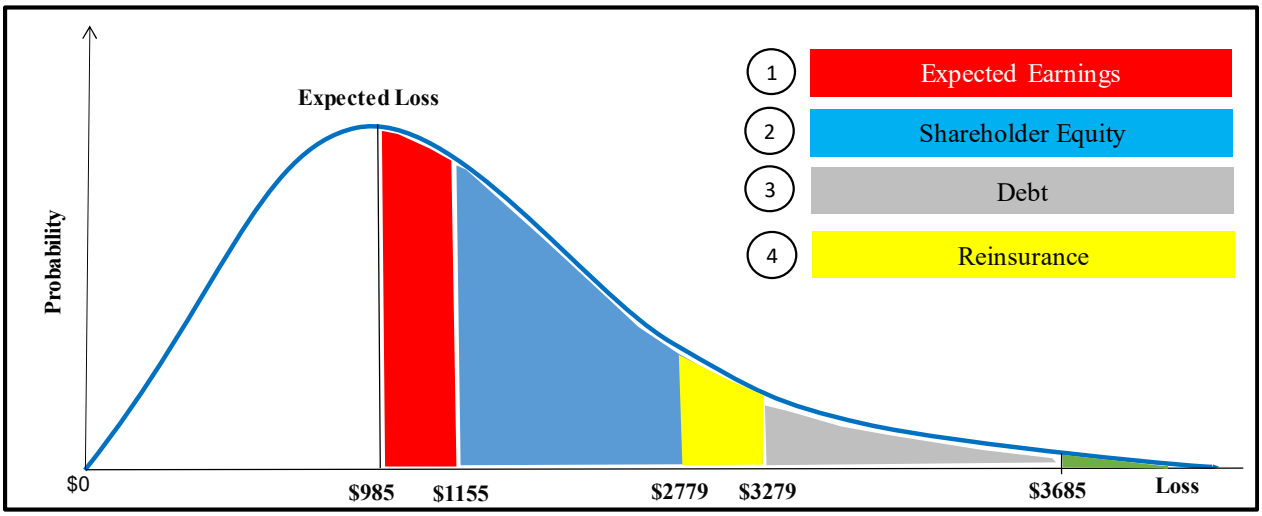


Exhibit 14: Sources of Capital, Net of Reinsurance [Illustrative]

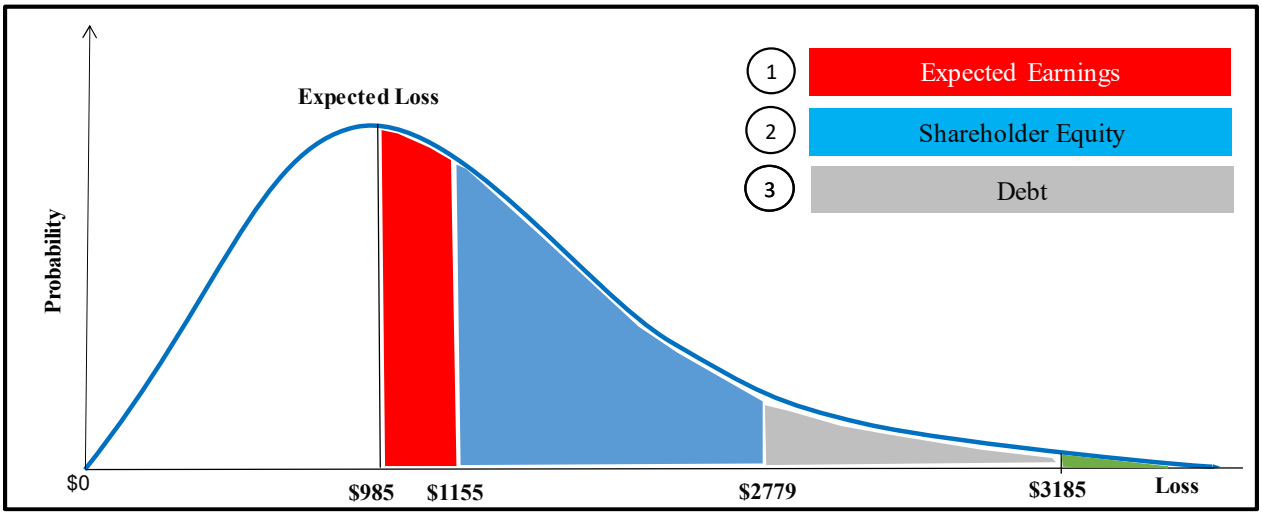


Exhibit 15: Cost of Capital, without Reinsurance

Option #2 - With Reinsurance

Capital Source	$ Amount	% Cost	$ Cost
Expected Earnings	170	0%	-
Equity	1,624	12%	195
Debt	406	4%	16
Reinsurance	500	6%	30
Weighted Average	2,700	**8.9%**	241

① The company charged the policyholder $1,200, leaving an expected $200 cushion above the expected loss of $1,000 to cover some adverse deviation. As a result of buying reinsurance, the company's expected loss decreases $15 to $985 for a ceded premium of $45. This $30 ceded profit reduces the net expected earnings to $170.

②/③ The remaining required net economic capital of $2,030, which is $500 less as a result of buying the treaty, is then split proportionally between equity and debt based on a targeted debt to equity ratio of 25%.

④ The company bought reinsurance to reduce net exposure to loss. For a reinsurance cost of $15, the company was able to reduce net required economic capital by $500. The overall cost of capital savings of $19 represents a little over 1.5% of gross premium, allowing the company to potentially price more competitively in the marketplace. A lower price may lead to increased market share, satisfying the investor, while decreasing cost to the consumer.

In practice, the evaluation of the "optimal" reinsurance structure involves analysis beyond pure economics. Insurers may leverage sophisticated capital models to simulate thousands of potential future realities upon which they may overlay various reinsurance strategies. The insights gleaned from these exercises provide the foundation on which to construct their reinsurance portfolios. Ultimately the tax, rating agency, regulatory, and market consequences are equally if not more important to consider. Having a framework which includes reinsurance as a capital ingredient allows companies to explicitly and quantitatively consider these available alternatives.

4. Stabilization of Results

Business Issue: Management is concerned that large year to year earnings volatility is impacting the investment community's valuation of the company stock.

Reinsurance Solution: The company evaluates various reinsurance retention levels to improve earnings stability.

Reinsurance has the ability to stabilize results by mitigating adverse loss volatility. A company that aims to stabilize quarterly loss volatility within a single business unit may pursue a different reinsurance strategy than one whose objective is to maximize long-term corporate earnings. Therefore, it is critical to clearly define what is meant by stabilization: stability of what **metric** (net combined ratio, earnings), over what **time horizon** (quarter to quarter, year to year).

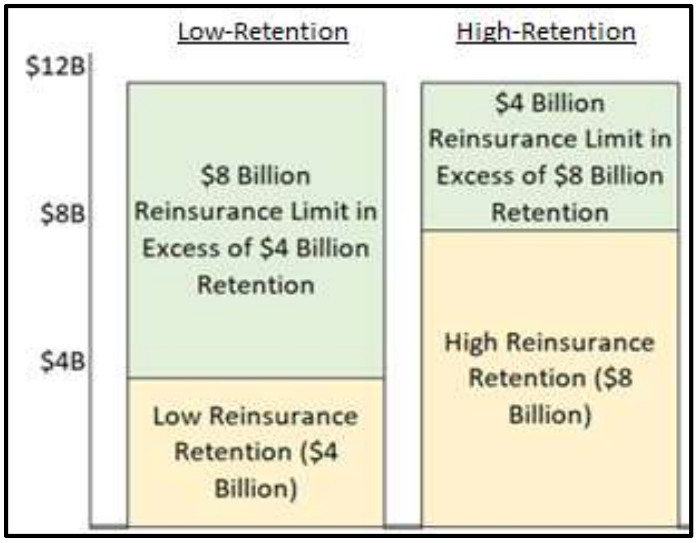
Consider an insurance company that is only exposed to property catastrophe risk. This company's management emphasizes the importance of **corporate earnings**, but also values stability of earnings over a **five-year** time horizon. The distribution of gross annual aggregate loss and LAE for the company is as follows:

- Average annual aggregate loss and LAE: $5 million
- 1 in 5-year annual aggregate loss and LAE: $8,059 million
- 1 in 10-year annual aggregate loss and LAE: $9,824 million

The company has a business plan for the prospective year where it expects to earn $10 million in premium and pay $4 million and $1 million in loss and LAE, respectively. The company is deciding between two reinsurance strategies:

1) A low-retention reinsurance option: $8 billion of limit in excess of a $4 billion loss and LAE retention which costs $3.2 billion per year.
2) A high-retention option: $4 billion of limit in excess of $8 billion loss and LAE retention which costs $1 billion per year.

Exhibit 16: Reinsurance Structures by Retention Option



By comparing the statutory accounting entries between the low reinsurance retention and the high retention options, we can evaluate the effectiveness of each strategy with respect to maximizing overall earnings and minimize earnings volatility.

Assumptions:

1) *Annual gross earned premium for the company is $10 billion*
2) *Net investment income earned is greater for the high-retention insurance company resulting from the greater earned premium.*
3) *Reinsurance recoveries are proportionally allocated between loss and LAE*
4) *Assume the actual catastrophe loss and LAE by accident year emerge as follows (in $ billions):*

Exhibit 17: Annual Catastrophe Loss and LAE ($ millions)

	Loss	LAE	Loss + LAE
Year 1:	4,000	1,000	5,000
Year 2:	3,200	800	4,000
Year 3:	4,800	1,200	6,000
Year 4:	8,000	2,000	10,000
Year 5:	0	0	0
Average	4,000	1,000	5,000

Exhibit 18: The Insurance Company Statutory Statement of Income [Low] ($ millions)

Low-Retention Insurance Company Statutory Statement of Income (in $millions)

Line	Description	Plan	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1.	Premiums earned	6,800	6,800	6,800	6,800	6,800	6,800	34,000
2.	Losses incurred	2,582	3,200	3,200	3,200	3,200	-	12,800
3.	Loss adjustment expenses incurred	645	800	800	800	800	-	3,200
4.	Other underwriting expenses incurred	3,500	3,500	3,500	3,500	3,500	3,500	17,500
8.	Underwriting income	73	(700)	(700)	(700)	(700)	3,300	500
11.	Investment income	1,000	1,000	1,000	1,000	1,000	1,000	5,000
16.	Net income before income tax	1,073	300	300	300	300	4,300	5,500
							Average Net Income BFIT	1,100
							Standard Deviation of Net Income BFIT	1,789
							Coefficient of Variation of Net Income BFIT	163%

Exhibit 19: The Insurance Company Statutory Statement of Income [High] ($ millions)

High-Retention Insurance Company Statutory Statement of Income (in $millions)

Line	Description	Plan	Year 1	Year 2	Year 3	Year 4	Year 5	Total
1.	Premiums earned	9,000	9,000	9,000	9,000	9,000	9,000	45,000
2.	Losses incurred	3,713	4,000	3,200	4,800	6,400	-	18,400
3.	Loss adjustment expenses incurred	928	1,000	800	1,200	1,600	-	4,600
4.	Other underwriting expenses incurred	3,500	3,500	3,500	3,500	3,500	3,500	17,500
8.	Underwriting income	858	500	1,500	(500)	(2,500)	5,500	4,500
11.	Investment income	1,110	1,110	1,110	1,110	1,110	1,110	5,550
16.	Net income before income tax	1,968	1,610	2,610	610	(1,390)	6,610	10,050
							Average Net Income BFIT	2,010
							Standard Deviation of Net Income BFIT	2,966
							Coefficient of Variation of Net Income BFIT	148%

Plan net income before income tax is lower for the low-retention reinsurance program [$1.073 billion] compared to the high-retention program [$1.968 billion], due to the greater expected reinsurer profit ceded and lower net investment income. The results based on actual catastrophe

emergence show similar findings. Actual income over the five-year period is greater for the high retention solution.

The low reinsurance deductible option does mitigate losses in certain years. This results in a lower standard deviation of annual earnings, but standard deviation is not the only measure of volatility. The coefficient of variation [standard deviation divided by the mean] is actually lower under the high-retention strategy. Here, the increase in expected earnings outweighs the additional volatility that comes with the higher retention.

The conclusion of this particular case study (that the high deductible option is the better choice with respect to earnings stability) is not representative of all possible scenarios. If the distribution of catastrophe losses or cost of the reinsurance protection itself varied, then it would be entirely possible to reach an alternative conclusion regarding the optimal reinsurance strategy. The key takeaways are to be thoughtful when defining a measure of stability – inclusive of both the metric and the time horizon – and to weigh the reinsurance costs associated with achieving such stability.

5. Market Entrance / Underwriting Guidance

Rapid expansion in a relatively untested or unknown area of the market may be fraught with growing pains. These pains may manifest themselves in the form of poor underwriting results, adverse selection, or generally mispriced business until experience becomes voluminous enough to be credible and reliable. Reinsurance is a useful tool to help companies enter a market segment or a product line where they may not fully understand the inherent risk. Reinsurers, who cannot directly service the primary market may share their pricing and underwriting expertise with their ceding insurers. This symbiotic relationship is fundamental to expanding and developing new markets.

Business Issue: A U.S. based company is interested in writing a new cyber risk product.

Reinsurance Solution: Use quota share reinsurance to facilitate market entrance.

Consider a U.S. company which recognizes the market opportunity for cyber insurance but does not yet have the requisite actuarial data or underwriting experience to price the product appropriately. To reduce the company's risk while it develops the new product, the company pursues a quota share reinsurance arrangement with a reinsurer who has experience with cyber insurance. Motivated by the lack of expertise with this coverage, the company decides to cede 80% of all premium and loss associated with the new business. In return, the reinsurer agrees to pay a ceding commission of 20% to cover the primary carriers cost of writing new business. For accounting simplicity, assume a new legal entity is established to handle this business.

Exhibit 20: Quota Share Reinsurance Assumptions ($ thousands)

Quota Share Reinsurance	
(in $thousands)	
Quota Share %	80%
Written Premium	20,000
Earned Premium	10,000
Loss + LAE Ratio	70%
Expense Ratio	18%
Ceding Commission	20%
Gross Loss Paid in Year 1	5,000
Reinsurance Recoveries Received in Year 1	3,000
Initial Capitalization	5,000

Exhibit 21: The Insurance Company Statutory Balance Sheet ($ thousands)

Stat Balance Sheet (December 31)		Initial Capitalization (January 1st)	Before Reinsurance	Ceded Adjustment	Net
Assets					
12.	Cash and invested assets	5,000	16,400	(9,800)	6,600
16.1	Amounts recoverable from reinsurers	0	0	1,000	1,000
28.	**Total Assets**	**5,000**	**16,400**	**(8,800)**	**7,600**
Liabilities, Surplus, and Other Funds					
1.,3.	Losses and loss adjustment expense	0	2,000	(1,600)	400
9.	Unearned premiums	0	10,000	(8,000)	2,000
28.	**Total Liabilities**	**0**	**12,000**	**(9,600)**	**2,400**
37.	**Surplus as regards policyholders**	**5,000**	**4,400**	**800**	**5,200**

We discuss four of the statutory balance sheet lines impacted by the cyber loss experience and reinsurance contract:

Assets

I. Cash and Invested Assets

The company writes and receives $20 million in direct written premium. The company make a $5 million loss payment and a $3.6 million expense payment in year one. As a result, invested assets increase by $11.4 million [$20 million - $5 million - $3.6 million] on top of the initial capitalization of $5 million. The company cedes 80% of the premium or $16 million to the reinsurer. This is offset by the ceding commission of 20% or $3.2 million to cover the costs of writing new business. Finally, the reinsurer makes a payment of $3 million in year one. These result in a net decrease in cash of $9.8 million [-$16 million + $3.2 million + $3 million].

II. Amounts Recoverable from Reinsurers

This line accounts for expected recoveries on Loss and LAE already **paid** by the company and excludes **expected** reinsurance recoveries on Loss and LAE reserves. The company paid $5 million in year 1; 80% or $4 million of which is the responsibility of the reinsurer. Given the reinsurer only paid $3 million (and assuming the bill was sent recently, i.e. not overdue), a reinsurance recoverable asset of $1 million is established on a net basis.

Liabilities

III. Losses and LAE

Loss and LAE reserves are reflected net of reinsurance recoveries on the balance sheet. The expected ultimate gross value of the liabilities is 70% of $10 million of earned premium or $7 million. As of year-end the company has paid $5 million. Therefore, a liability for the outstanding $2 million is established. 80% of the gross reserves, or $1.6 million, is ceded to the reinsurer leaving a net liability of $0.4 million.

IV. Unearned Premium

The unearned premium liability represents the unearned portion of outstanding contracts. As of year-end there is $10 million of gross unearned premium. Again, 80% or $8 million is ceded to the reinsurer leaving a $2 million unearned premium reserve on the balance sheet.

Exhibit 22: Premium to Statutory Surplus Ratios ($ thousands)

	Without Reinsurance	With Reinsurance
GWP	20,000	20,000
NWP	20,000	4,000
Surplus	4,400	5,200
GWP / Surplus	4.55	3.85
NWP / Surplus	4.55	0.77

Through reinsurance, the primary company is able to enter the cyber marketplace and operate at sound premium to surplus levels. Each year as the relationship progresses, the underwriters learn valuable information about the product while the actuaries gain better data. The reinsurer is equally content to assume 80% of the new business and build a strong working relationship with the carrier. In the long run, the primary company may slowly decide to reduce the quota share percentage and begin to retain more of the risk and reward in-house. But importantly, without reinsurance, this company would not have been in a position to make that decision in the first place!

6. Withdrawal from a Market Segment

Business Issue: New management wishes to exit the workers compensation market and focus future business plans on home and auto.

Reinsurance Solution: Purchase retroactive reinsurance for the balance sheet reserves. Discontinue writing new and renewal business prospectively.

In addition to market *entrance*, reinsurance can also facilitate *withdrawal* from a market segment. Insurers may wish to exit a line of business due to its low profit margins, unpredictable losses, or excessive capital requirements. Other times, management may wish to put decisions of the past behind them by removing liabilities from their balance sheet via retroactive reinsurance. Regardless of motivation, any retroactive strategy comes with complex accounting requirements.

Per SSAP 62R, "Certain reinsurance agreements which transfer both components of insurance risk [and] cover liabilities which occurred **prior** to the effective date of the agreement" require retroactive accounting. The statement continues: "Due to potential abuses involving the creation of surplus to policyholders and the distortion of underwriting results, special accounting treatment for these agreements is warranted." The differences between U.S. GAAP and Statutory accounting treatment of such transactions are discussed using a hypothetical retroactive reinsurance contract to reinsure workers compensation liabilities on a firm's balance sheet.

From 2014-2016 a company wrote workers compensation insurance, in addition to home and auto. New management made the decision to discontinue writing workers compensation beginning January 1, 2017 and instead focus resources on their home and auto business moving forward. The company entered into a retroactive reinsurance agreement, effective December 31st, 2016, to reinsure all legacy workers compensation liabilities on their balance sheet. A price of $2 million was agreed to transfer booked reserves of $2.47 million. Assume that the reinsurance limit is capped at $4 million. The price is based on a discounted reserve estimate of $1.8 million plus a risk margin of $0.2 million to compensate the reinsurer for volatility.

We first look at how this transaction is accounted for on a statutory balance sheet over time. Assume no other reinsurance has been or is purchased. Importantly, the ceding entity shall record, **without recognition of the retroactive reinsurance**, all loss and loss expense reserves on the balance sheet and in all schedules and exhibits. Only prospective reinsurance is to be included. The ceded triangles therefore are included here as informational to help with the example and would not be included in Schedule P exhibits.

Exhibit 23: Selected Workers Compensation Triangles ($ thousands)

Ultimate Incurred Workers Compensation Gross Loss + LAE

(as of year-end)

AY / CY	*2014*	*2015*	*2016*	*2017*	*2018*
2014	2,000	2,100	2,300	2,500	2,500
2015		2,500	2,500	2,700	2,700
2016			3,000	3,300	3,300
2017				0	0
2018					0
CY Totals	2,000	4,600	7,800	8,500	8,500

Outstanding Workers Compensation Gross Loss + LAE

(as of year-end)

AY / CY	*2014*	*2015*	*2016*	*2017*	*2018*
2014	1,000	525	345	125	0
2015		1,250	625	405	135
2016			1,500	825	495
2017				0	0
2018					0
CY Totals	1,000	1,775	2,470	1,355	630

Incremental Paid Workers Compensation Gross Loss + LAE

(by calendar year)

AY / CY	*2014*	*2015*	*2016*	*2017*	*2018*
2014	1,000	575	380	420	125
2015		1,250	625	420	270
2016			1,500	975	330
2017				0	0
2018					0
CY Totals	1,000	1,825	2,505	1,815	725

Ultimate Incurred Workers Compensation Ceded Loss + LAE

(as of year-end of each calendar year)

AY / CY	2014	2015	2016	2017	2018
2014			345	545	545
2015			625	825	825
2016			1,500	1,800	1,800
2017				0	0
2018					0
CY Totals			2,470	3,170	3,170

Exhibit 24: The Insurance Company Statutory Balance Sheet ($ thousands)

Stat Balance Sheet (as of year-end)		2016	2016	2017	2018
		Without Reinsurance	With Reinsurance	With Reinsurance	With Reinsurance
Assets					
1.	Bonds	25,000	25,000	25,000	25,000
5.	Cash	10,000	8,000	8,000	8,000
28.	**Total Assets**	**35,000**	**33,000**	**33,000**	**33,000**
Liabilities, Surplus, and Other Funds					
1.,3.	Losses and loss adjustment expense	20,000	20,000	18,885	18,160
25.	Contra-liability - Retro Reinsurance Ceded	0	-2,470	-1,355	-630
28.	**Total Liabilities**	**20,000**	**17,530**	**17,530**	**17,530**
29.	Special Surplus from Retroactive Reinsurance	0	470	1,170	630
35.	Unassigned Surplus	15,000	15,000	14,300	14,840
37.	**Surplus as regards policyholders**	**15,000**	**15,470**	**15,470**	**15,470**
Income Statement Impact (to "Other Income")			**470**	**700**	**0**

2016 (with Reinsurance) [Transfer of $2.47 million of reserves for $2 million cash]

a. The amount paid for the contract reduces the cash balance (-$2 million).

b. All reserves are recorded gross of retroactive reinsurance. Instead, the ceding entity establishes a write-in contra-liability equal to the total amount of reserves transferred ($2.47 million).

c. The resulting surplus gain (+$0.47 million) is restricted via a write-in item aptly named "Special Surplus from Retroactive Reinsurance." The surplus gain remains restricted, i.e. cannot be extracted, until the reinsurance recoveries exceed the consideration paid ($2 million).

d. The ceding entity reports the initial gain arising from the retroactive reinsurance, the difference between the consideration paid ($2 million) and the total reserves ceded ($2.47 million), as a write-

in item on the Income Statement identified as Retroactive Reinsurance Gain and included in Other Income.

2017 [Gross and Ceded Ultimate increased to $3.17 million, paid loss = $1.815 million]

a. Gross reserves decrease by the amount paid in 2017 (-$1.815 million) and increase to reflect the increased estimate of our workers compensation reserves (+$0.7 million).

b. The contra-liability is similarly reduced by the amount paid by the reinsurer (-$1.815 million), who we assume pays their bills promptly, and increased to reflect future expected payments (+$0.7 million), resulting in a net decrease of $1.115 million.

c. $0.7 million moves from unassigned surplus to special surplus to account for the expected increase in ceded recoveries (+$0.7 million). Remember, this remains restricted as the cumulative recoveries as of year-end 2017 are only $1.815 million, which is still less than the consideration paid of $2 million.

d. The ceding entity reports the incremental annual gain arising from the retroactive reinsurance, the difference between the initial reserves ($2.47 million) and the current ceded reserve estimate ($3.17 million) as a write-in item on the Income Statement identified as Retroactive Reinsurance Gain and included in Other Income. (+$0.7 million)

2018 [Gross and Ceded Ultimate remains at $3.17 million, paid loss = $0.725 million]

a. Gross reserves decrease by the amount paid in 2018 (-$0.725 million).

b. The contra-liability is similarly reduced by the amount paid by the reinsurer (-$0.725 million).

c. The cumulative recoveries from the reinsurer as of year-end 2018 are now $2.54 million. Because the cumulative recoveries now exceed the consideration paid ($2 million), the excess or $0.54 million of the $1.17 million special surplus is transferrable from special surplus to unassigned surplus.

d. There is no income statement impact in 2018.

These special rules prevent companies from extracting capital and returning it to shareholders prematurely by inflating ceded reserves at the onset of the contract. This treatment/rule is consistent with statutory accounting's conservatism principle and the protection of policyholders.

Next, we'll contrast how the U.S. GAAP balance sheet accounts for this transaction over time. The basic concept under U.S. GAAP is to treat the retroactive reinsurance the same as prospective reinsurance, but to defer the recognition of any gain. This is in contrast to the statutory treatment just discussed which does not recognize the retroactive ceded losses as a direct offset, but does

allow the recognition of the gain in surplus, albeit restricted. As a reminder, ceded reserves under U.S. GAAP are shown as an asset line item, not as an offset to the gross liabilities.

Exhibit 25: The Insurance Company GAAP Balance Sheet ($ thousands)

GAAP Balance Sheet	2016	2016	2017	2018
	Without	With	With	With
Assets	Reinsurance	Reinsurance	Reinsurance	Reinsurance
Investments	25,000	25,000	25,000	25,000
Cash	10,000	**8,000**	8,000	8,000
Net Reinsurance Receivable	0	**2,470**	**1,355**	**630**
Prepaid Reinsurance Premiums	0	0	0	0
Total Assets	**35,000**	**35,470**	**34,355**	**33,630**
Liabilities				
Liabilities for claim and claim settlement expenses	20,000	**20,000**	**18,885**	**18,160**
Deferred Retroactive Reinsurance Gain		470	825	383
Equity	15,000	**15,000**	**14,645**	**15,087**
Total Liabilities and equity	**35,000**	**35,470**	**34,355**	**33,630**
Income Statement Impact (to "Other Income")		**0**	**345**	**441**
Recovery Method:			**73%**	**54%**

2016 (with Reinsurance) [Transfer of $2.47 million of reserves for $2 million cash]

a. The amount paid for the contract reduces the cash balance. (-$2 million)

b. An asset is established equal to the ceded reserves. ($2.47 million)

c. A deferred retroactive reinsurance gain is established to account for the resulting capital gain on the balance sheet. (+$0.47 million)

d. This gain is deferred and amortized over the remaining settlement period on the Income Statement.[8] [$0 in 2016 as the contract goes into effect effectively in 2017]

2017 [Gross and Ceded Reserve opinion increased to $3.17 million, paid loss = $1.815 million]

a. The reinsurance receivable asset shall reflect the related change in the amount recoverable from the reinsurer as a result on increase in reserves (+$0.7 million). The receivable is also reduced by the amount paid by the reinsurer in 2017 (-$1.815 million). We assume, for simplicity, the reinsurer

[8] There are two methods to amortize resulting gain on the balance sheet: 1) Effective-Interest Method and 2) Recovery Method

reimburses the primary carrier immediately with no delay. The net impact is a reduction of -$1.115 million.

b. The gross liabilities are similarly increased by the change in ultimate incurred losses (+$0.7 million) and reduced by the amount paid (-$1.815 million).

c. The deferred retroactive reinsurance gain is increased by $0.7 million to account for the updated ceded reserve estimates. In addition, the balance is reduced by the amount of gain which amortized in 2017 (-$0.345 million) (See step d), resulting in a net increase of $0.355 million.

d. To compute the impact to the income statement, we must determine what portion of the prior year gain ($0.47 million) is amortizable in 2017. Using the recovery method, we compute the ratio of paid reinsurance receivables in 2017 ($1.815 million) to total outstanding ultimate ceded reserves as of prior year-end 2016 ($2.470) = 73%. We then multiply the prior deferred retroactive gain of $0.47 million by 73% to compute the income statement benefit of $0.345.

2018 [Reserve opinion remains at $3.17 million, paid loss = $0.715 million]

a. The reinsurance receivable asset is reduced by the amount paid by the reinsurer in 2018 [-$0.725 million].

b. The gross liabilities are similarly reduced by the amount paid [-$0.725 million].

c. The deferred retroactive gain is reduced by the amount of amortization in 2018 [-$0.441 million] – see d.

d. To compute the impact to the income statement, we must determine what portion of the prior year gain ($0.825 million) is amortizable in 2018. Using the recovery method, we compute the ratio of paid reinsurance receivables in 2018 ($0.725 million) to total outstanding ultimate ceded reserves as of prior year-end 2017 ($1.355 million) = 54%. We then multiply the prior deferred retroactive gain of $0.825 million by 54% to compute the income statement cashflow of $0.441 million.

As with most U.S. GAAP accounting conventions, the retroactive reinsurance rules attempt to align earnings in order to provide insight to the investment community. The conventions prevent companies from artificially boosting earnings via retroactive reinsurance by unlocking and recognizing the discount embedded in the reserves at the onset of a deal.

7. Mandatory and Voluntary Pools

Public Policy Issue: A state wants to ensure that property insurance is available for all residents , even those not desired by the voluntary market.

Reinsurance Solution: Insurance companies must participate in a state FAIR Plan which insures homes not able to obtain insurance in the voluntary market

Mandatory pools are an insurance mechanism for risks not able to obtain coverage from the voluntary market. In return for access to the market, carriers **must** participate in the mandatory pools to provide insurance for these "uninsurable" risks. Mechanically, insurance companies, either designated "servicing carriers" for that residual market or any voluntary writer under a "take all comers" provision, provide coverage by directly insuring these unwanted risks, then cede the associated premium and loss to a centrally-maintained pool. The voluntary writers then assume a portion of the aggregate financial results of the pool based on predetermined allocation arrangements.[9] It is possible for a pool member to be both a cedant to and reinsurer of the pool simultaneously[10]. Examples of mandatory pools include residual markets for workers compensation and automobile as well as FAIR plans and coastal wind pools[11] for property.

Voluntary pools are similar to mandatory pools in structure but are not mandated by states to participate. Voluntary pools are often used to share risks too large for a single insurer / or reinsurer to cover alone (e.g., nuclear, aircraft, or energy risks). Pool participants are able to diversify their portfolios and reduce risk by taking on only small shares of several independent high-risk exposures. From an accounting perspective, pools can represent significant ceded balances within the financial statements for insurance carriers. Actuaries should understand the pooling arrangements companies have in place prior to the evaluation of financial statements and capital requirements.[12]

8. Internal Reinsurance Transactions

Business Issue: Business unit appetite is only $20 million dollars per exposure, whereas the corporate appetite is $50 million dollars per exposure.

Reinsurance Solution: Internal reinsurance is an alternative to buying reinsurance externally.

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[9] For residual markets, the allocation is typically a percent of premium written.
[10] This occurs when the insurer is a servicing carrier for the residual market, or when the residual market is of the "take all comers" variety. Under a "take all comers" market an insurer cannot refuse to insure a customer but can cede customers it does not choose to retain to the residual market pool.
[11] Not all such pools operate as reinsurance entities. Some issue policies directly, then assess writers in the voluntary market for any net loss.
[12] For example, cessions to mandatory pools have zero charge within the ceded reinsurance credit risk portion of the US RBC Model.

Internal reinsurance in this context refers to the pooling and sharing of premium and loss among business units **within the same legal entity** (or pool) for the purpose of normalizing losses and stabilizing results within business units. Assume the Chief Risk Officer (CRO) deemed a retention of $50 million per-risk is the most capital-efficient trade-off for the company. Accordingly, an enterprise-wide property reinsurance program attaching at $50 million per-risk was implemented.

However, a reinsurance retention of $50 million is greater than the risk tolerance of certain individual business units. The business units express interest in purchasing $30 million of reinsurance cover in excess of $20 million per-risk to fill the gap between the enterprise risk appetite and their own. The business units could purchase reinsurance externally, but as an alternative, each business unit could cede premium and loss to an internal reinsurance facility. From the business units' perspectives, this behaves just like external reinsurance. From the company perspective, the $30 million excess of $20 million layer is retained in-house. The company can retain the profitable business, rather than ceding it to an external reinsurer. This helps to accommodate the differing risk appetites held by the CRO and the business units, and ought to save money for the company over time.

9. Fronting Arrangements

Business Issue: An insurer, that is an admitted carrier only in the United States, wants to insure a policyholder who owns commercial property both in the U.S. and Japan.

Reinsurance Solution: Enter into fronting arrangement with Japanese carrier to facilitate coverage

Fronting arrangements are used to issue policies on behalf of clients with no access to properly licensed insurance companies. Typically, a customer acquires coverage directly from an admitted insurance company that is licensed to write business in the state where the customer is located. But what if the customer wants to cover a risk outside of the primary carrier's legal underwriting jurisdiction? In those circumstances, another carrier, who is licensed in the state or country where the risk is located, can issue the policy as part of a fronting agreement. The fronting company issues the original policy, and then immediately cedes all of the financial results to the unlicensed company or group, who acts as a reinsurer.

Consider an insurer in the United States who wishes to insure a multinational company. The majority of the business is located in the United States, but the company owns several properties in Japan, where the insurer is not licensed to write business. In this case the insurer is not broadly attempting to enter the Asian market. The insurer simply wants to fully service its U.S. customer, wherever the risks may be located. A fronting arrangement can facilitate this business objective whereby a Japanese company issues the policy and cedes 100% to the U.S. company.

Conclusion

This paper provides an introductory-level description of the motivations for buying reinsurance and the financial impacts of such decisions. We hope to impart on readers that a truly holistic approach to reinsurance includes an analysis and understanding of the accounting, legal, regulatory, economic, tax, and financial facets of the transaction.

Appendix

Additional Detail Related to Catastrophe Reinsurance: Low & Medium Severity Financials ($ millions)

Low

Statutory Balance Sheet (as of year-end)		Net [No Events]	Gross [w/ Events]	Ceded Adjustment [w/ Events]	Net [w/ Events]
Assets					
12.	Cash and invested assets	37,000	35,000	(1,500)	33,500
16.1	Amounts recoverable from reinsurers	0	0	0	0
28.	**Total Assets**	**37,000**	**35,000**	**(1,500)**	**33,500**
Liabilities, Surplus, and Other Funds					
1.,3.	Losses and loss adjustment expense	15,000	15,000	0	15,000
9.	Unearned premiums	7,000	7,000	0	7,000
28.	**Total Liabilities**	**22,000**	**22,000**	**0**	**22,000**
37.	**Surplus as regards policyholders**	**15,000**	**13,000**	**(1,500)**	**11,500**

Medium

Statutory Balance Sheet (as of year-end)		Net [No Events]	Gross [w/ Events]	Ceded Adjustment [w/ Events]	Net [w/ Events]
Assets					
12.	Cash and invested assets	37,000	36,000	(1,500)	34,500
16.1	Amounts recoverable from reinsurers	0	0	0	0
28.	**Total Assets**	**37,000**	**36,000**	**(1,500)**	**34,500**
Liabilities, Surplus, and Other Funds					
1.,3.	Losses and loss adjustment expense	15,000	19,100	(1,600)	17,500
9.	Unearned premiums	7,000	7,000	0	7,000
28.	**Total Liabilities**	**22,000**	**26,100**	**(1,600)**	**24,500**
37.	**Surplus as regards policyholders**	**15,000**	**9,900**	**100**	**10,000**

Errata to
Reinsurance Accounting & Strategy for the Actuary
By Derek Cedar, FCAS, CERA & Andrew Thompson, FCAS, January 2020

Casualty Actuarial Society[1]

Version 1.0, March 31, 2021

This note presents errata to material in Cedar & Thompson's paper on "Reinsurance Accounting & Strategy for the Actuary." Items printed in **red** indicate an update, clarification, or change.

1. Errata

The following Exhibit Header of Cedar & Thompson (page 6) should be amended from:

Net
[No Events]

to:

Gross
[No Events]

2. Errata

The following Exhibit Headers of Cedar & Thompson (page 28) should be amended from:

Net
[No Events]

to:

Gross
[No Events]

[1] This note was prepared by the Exam 6-United States Syllabus Committee.

A PUBLIC POLICY PRACTICE NOTE

Statements of Actuarial Opinion On Property and Casualty Loss Reserves

December 2021

Developed by
The Casualty Practice Council's
Committee on Property and Liability Financial Reporting

American Academy of Actuaries
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2021

Developed by the
Committee on Property and Liability Financial Reporting
of the American Academy of Actuaries

The American Academy of Actuaries is a 19,500+ member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policy makers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

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Property and Casualty Practice Note

2021

Table of Contents

Property and Casualty Practice Note

2021

1. Introduction

This practice note is not a promulgation of the Actuarial Standards Board, is not an actuarial standard of practice, is not binding upon any actuary and is not a definitive statement as to what constitutes generally accepted practice in the area under discussion. Events occurring subsequent to the publication of this practice note may make the practices described in this practice note irrelevant or obsolete.

This practice note was prepared by the Committee on Property and Liability Financial Reporting (COPLFR) of the Casualty Practice Council of the American Academy of Actuaries (Academy). COPLFR is a committee comprised of actuaries from various roles in the property and casualty (P&C) industry that monitors and advises on activities as respects financial reporting related to property and casualty (P&C) risks. COPLFR annually updates and publishes this practice note to include discussion regarding changes in the *NAIC Annual Statement Instructions—Property/Casualty* (NAIC Annual Statement Instructions) regarding the Actuarial Opinion, the Actuarial Opinion Summary, and Actuarial Report.

COPLFR also authors other publications[1] useful for practicing actuaries and provides comment from an independent actuarial viewpoint on financial reporting issues and proposed reporting changes as they develop that may impact the work of practicing actuaries.

1.1 What are practice notes?

The Academy's Guidelines for Developing Practice Notes[2] states:

> *"The purpose of practice notes is to provide information to actuaries on current or emerging practices in which their peers are engaged. They are intended to supplement the available actuarial literature, especially where the practices addressed are subject to evolving technology, recently adopted external requirements, or advances in actuarial science and other applicable disciplines.*
> *…*
> *Practice notes are not interpretations of actuarial standards of practice nor are they meant to be a codification of generally accepted actuarial practice. Actuaries are not bound in any way to comply with practice notes or to conform their work to the practices described in practice notes."*[3]

1.1.1 Discussion

Practice notes provide discussion and illustration on areas of common practice among actuaries. Each practice note focuses on a specific topic or application of practice.

As noted in the Academy's guidelines, practice notes are not intended to be an interpretation of the actuarial standards of practice, nor are practice notes meant to be a codification of generally accepted or

[1] For example, *An Overview for P/C Insurers' Audit Committees: Effective Use of Actuarial Loss Reserve Expertise*, updated in 2020 and also included within this practice note as Appendix III.6
[2] Adopted by the Academy's Board of Directors in September 2006.
[3] Id. See http://www.actuary.org/content/guidelines-developing-practice-notes.

appropriate actuarial practice. Actuaries are not in any way bound to comply with practice notes or to conform their work to the practices they describe.

1.2 Purpose of this practice note

The purpose of this practice note is to provide information to actuaries on current practices in which their peers are engaged related to signing a P&C Statement of Actuarial Opinion (SAO) and Actuarial Opinion Summary (AOS) as required by the National Association of Insurance Commissioners (NAIC).

FAQ: Are actuaries required to comply with this practice note or follow the illustrations provided herein?

A: No. The practice note provides information to actuaries on current and emerging practices in which their peers are engaged. Actuaries are not bound in any way to comply with practice notes or to conform their work to the practices described in practice notes.

1.2.1 Discussion

Each year COPLFR reviews and updates the practice note for SAOs on P&C loss reserves. The updates typically include discussion around changes in the *NAIC Annual Statement Instructions—Property/Casualty, Actuarial Opinion* (NAIC SAO Instructions). Changes to this year's practice note that are a result of new 2021 requirements from the Actuarial Standards Board (ASB) or NAIC (i.e., new or revised actuarial standard of practice (ASOP), NAIC Annual Statement Instructions, or SSAP) are highlighted in yellow, while additional discussion or clarifying edits are highlighted in gray. Minor edits such as year changes, moving text, correcting typos, and areas with deleted text may not be highlighted.

1.2.2 Terms of construction

As with the ASOPs promulgated by the ASB, there are certain terms used throughout this practice note that are integral to an informed reading. These include "must", "should," and "may". Rather than paraphrase these definitions, we will quote the definitions as provided in ASOP No. 1, *Introductory Standard of Practice*, section 2.1; these definitions are equally applicable to this practice note.

> *"Must/Should — The words "must" and "should" are used to provide guidance in the ASOPs. "Must" as used in the ASOPs means that the ASB does not anticipate that the actuary will have any reasonable alternative but to follow a particular course of action. In contrast, the word "should" indicates what is normally the appropriate practice for an actuary to follow when rendering actuarial services. Situations may arise where the actuary applies professional judgment and concludes that complying with this practice would be inappropriate, given the nature and purpose of the assignment and the principal's[4] needs, or that under the circumstances it would not be reasonable or practical to follow the practice.*

[4] Principal is defined in ASOP No. 1 as "a client or employer of the actuary."

Failure to follow a course of action denoted by either the term "must" or "should" constitutes a deviation from the guidance of the ASOP. In either event, the actuary is directed to ASOP No. 41, Actuarial Communications.

The terms "must" and "should" are generally followed by a verb or phrase denoting action(s), such as "disclose," "document," "consider," or "take into account." For example, the phrase "should consider" is often used to suggest potential courses of action. If, after consideration, in the actuary's professional judgment an action is not appropriate, the action is not required and failure to take this action is not a deviation from the guidance in the standard.

May— "May" as used in the ASOPs means that the course of action described is one that would be considered reasonable and appropriate in many circumstances. "May" in ASOPs is often used when providing examples (for example, factors the actuary may consider; methods that may be appropriate). It is not intended to indicate that a course of action is reasonable and appropriate in all circumstances, nor to imply that alternative courses of action are impermissible."[5]

Additionally, this practice note uses the term "required" when the course of action is required by a particular body (e.g., the NAIC Annual Statement Instructions), as specified.

1.3 Scope of practice note

According to the NAIC SAO Instructions,

> *"There is to be included with or attached to Page 1 of the Annual Statement, the statement of the Appointed Actuary, entitled "Statement of Actuarial Opinion" (Actuarial Opinion), setting forth his or her opinion relating to reserves specified in the SCOPE paragraph. The Actuarial Opinion, both the narrative and required Exhibits, shall be in the format of and contain the information required by this section of the Annual Statement Instructions - Property and Casualty."*[6]

FAQ: Does the scope of this practice note include title insurance opinions?

A: While the NAIC SAO Instructions for Title opinions are included in Appendix I.3, there is no explicit discussion around title opinions. However, actuaries may look to this practice note for discussion around many topics that are similar.

This practice note is intended to assist actuaries by describing practices that COPLFR believes are commonly employed in issuing SAOs and AOSs on loss and loss adjustment expense (LAE) reserves in compliance with the NAIC SAO Instructions for 2021. Actuaries may also find this information useful in preparing statements of actuarial opinion for other audiences or regulators.

[5] Actuarial Standards Board, ASOP No. 1, *Introductory Actuarial Standard of Practice*, Section 2.1. See http://www.actuarialstandardsboard.org/asops/introductoryactuarialstandardpractice/.
[6] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

1.3.1 Discussion

Approaches other than the ones described within this practice note may also be in common use. The information contained in this practice note is not binding on any actuary and is not a definitive statement of what constitutes generally accepted or appropriate practice in this area.

Note:

- Information taken from NAIC materials has been reproduced with the NAIC's permission. Unauthorized replication or distribution of NAIC materials is strictly prohibited.
- COPLFR appreciates the comments it has received since the issuance of the prior year's practice note and has incorporated a number of suggestions in this update. COPLFR also welcomes suggested improvements for future updates of this practice note. Suggestions may be sent to the current chairperson of COPLFR through the Academy's casualty policy analyst at casualty@actuary.org.

1.4 Overview of resources

The Code of Professional Conduct (the Code) requires actuaries to "be familiar with, and keep current with, not only the Code, but also applicable Law and rules of professional conduct for the jurisdictions in which the Actuary renders Actuarial Services."[7]

Appendix I.1 of this practice note provides the NAIC SAO Instructions with respect to the P&C SAO and AOS. The NAIC SAO Instructions for Title Insurance SAOs are also included for informational purposes only. No discussion is included.

Individual states may have requirements that modify or supplement the NAIC Annual Statement Instructions. The Appointed Actuary is encouraged to refer to the Academy's 2021 P/C Loss Reserve Law Manual for guidance on these points. The 2021 P/C Loss Reserve Law Manual is available for purchase from the Academy.

Additionally, actuaries are encouraged to carefully read and consider *Regulatory Guidance on Property and Casualty Statutory Statements of Actuarial Opinion, Actuarial Opinion Summaries, and Actuarial Reports for the Year 2021*, as prepared by the NAIC's Actuarial Opinion (C) Working Group (AOWG) of the Casualty Actuarial and Statistical (C) Task Force (CASTF) (hereinafter referred to as AOWG Regulatory Guidance) and included in Appendix II. The AOWG Regulatory Guidance pertains to the 2021 SAO and the AOS and supplements the NAIC SAO Instructions. The purpose is to provide timely regulatory guidance and clarity to companies and Appointed Actuaries regarding regulatory expectations with respect to the SAO and AOS. Note that absent a possible reference in state law or regulation, the

[7] American Academy of Actuaries, Code of Professional Conduct, January 1, 2001, Purpose section, last paragraph.

AOWG Regulatory Guidance is not binding. References to the AOWG Regulatory Guidance are included throughout this practice note.

Chapter 9 provides a listing of the most relevant Actuarial Standards of Practice (ASOPs) and Statements of Statutory Accounting Principles (SSAPs) that apply to the material covered by this practice note. It also provides resources to actuaries providing opinions other than those covered by the scope of this practice note.

1.4.1 Definitions

ASB—As explained in ASOP No. 1, *"The Actuarial Standards Board (ASB) promulgates actuarial standards of practice (ASOPs) for use by actuaries when rendering actuarial services in the United States. The ASB is vested by the U.S.-based actuarial organizations[8] with the responsibility for promulgating ASOPs for actuaries rendering actuarial services in the United States. Each of these organizations requires its members, through its Code of Professional Conduct[9] (Code), to satisfy applicable ASOPs when rendering actuarial services in the United States."*[10]

CASTF—According to the NAIC website, the mission of the NAIC CASTF *"is to identify, investigate and develop solutions to actuarial problems and statistical issues in the P/C insurance industry. The Task Force's goals are to assist state insurance regulators with maintaining the financial health of P/C insurers; ensuring that P/C insurance rates are not excessive, inadequate or unfairly discriminatory; and ensuring that appropriate data regarding P/C insurance markets are available."*[11]

AOWG—According to the NAIC website, the 2021 charges of the AOWG were: *"A. Propose revisions to the following, as needed, especially to improve actuarial opinions, actuarial opinion summaries and actuarial reports, as well as the regulatory analysis of these actuarial documents and loss and premium reserves….*

1. *Financial Analysis Handbook.*
2. *Financial Condition Examiners Handbook*
3. *Annual Statement Instructions-Property/Casualty.*
4. *Regulatory guidance to appointed actuaries and companies.*
5. *Other financial blanks and instructions, as needed."*[12]

FAQ: Are ASOPs binding on members of the U.S.-based actuarial organizations when rendering actuarial services in the U.S.?

A: Yes. According to ASOP No. 1, Section 1: "ASOPs are binding on members of the U.S.-based actuarial organizations when rendering actuarial services in the U.S. While these ASOPs are binding, they are not the only considerations that affect an actuary's work. Other considerations may include legal and regulatory requirements, professional requirements promulgated by employers or actuarial organizations, evolving actuarial practice, and the actuary's own professional judgment informed by the nature of the engagement. The ASOPs provide a basic framework that is intended to accommodate these additional considerations."

[8] The American Academy of Actuaries, the American Society of Pension Professionals and Actuaries, the Casualty Actuarial Society, the Conference of Consulting Actuaries, and the Society of Actuaries.
[9] These organizations adopted the Code of Professional Conduct effective January 1, 2001.
[10] Actuarial Standards Board, ASOP No. 1, *Introductory Actuarial Standard of Practice*, http://www.actuarialstandardsboard.org/asops/introductoryactuarialstandardpractice/, Section 1.
[11] https://content.naic.org/cmte_c_catf.htm
[12] https://content.naic.org/cmte_c_act_opin_wg.htm

ASOPs—According to the ASB website, ASOPs *"identify what the actuary should consider, document, and disclose when performing an actuarial assignment"* and *"set standards for appropriate practice for the U.S."*[13]

SSAPs—*"Statements of Statutory Accounting Principles (SSAPs) are published by the NAIC in its Accounting Practices and Procedures Manual. The manual includes more than 100 SSAPs, which serve as the basis for preparing and issuing statutory financial statements for insurance companies in the U.S. in accordance with, or in the absence of, specific statutes or regulations promulgated by individual states."*[14]

1.5 Organization of this practice note

Each chapter in this practice note begins with an opening paragraph describing the contents and includes an excerpt of the actual NAIC SAO Instructions pertaining to the chapter. Separate sections within the chapter provide details on the topic, including further quoted instruction, definitions, discussion, and illustrative language. The FAQs reside with the relevant chapter/section for ease of use.

The chapters are organized to facilitate use of the practice note and to align it with the structure of the SAO. Chapter 1 introduces the practice note. It is followed by four chapters (Chapter 2 through Chapter 5) that line up with the four required sections of the SAO: IDENTIFICATION, SCOPE, OPINION, and RELEVANT COMMENTS (sections 3 through 6 of the NAIC SAO Instructions). As described in the NAIC SAO Instructions,

> *"The Actuarial Opinion must consist of an IDENTIFICATION paragraph identifying the Appointed Actuary; a SCOPE paragraph identifying the subjects on which an opinion is to be expressed and describing the scope of the Appointed Actuary's work; an OPINION paragraph expressing his or her opinion with respect to such subjects; and one or more additional RELEVANT COMMENTS paragraphs. These four Sections must be clearly designated."*[15]

Chapter 6 provides additional considerations around the SAO, including filing requirements and considerations when the Appointed Actuary becomes aware of errors in the SAO. Chapter 7 covers the AOS and Chapter 8 covers the Actuarial Report, which is considered to be the culmination of the SAO process. Finally, Chapter 9 provides resources for the Appointed Actuary.

The four appendices have been organized to make it easier to locate pertinent information. Appendix I provides the NAIC SAO and AOS Instructions, along with the excerpt of the NAIC Annual Statement Instructions regarding auditor data testing. Appendix II provides the 2021 AOWG Regulatory Guidance. Appendix III contains more detailed information about specific topics that may not be common to all

[13] Actuarial Standards Board, ASOP No. 1, *Introductory Actuarial Standard of Practice*, http://www.actuarialstandardsboard.org/asops/introductoryactuarialstandardpractice/ , Section 1.
[14] Odomirok et al, *Financial Reporting through the Lens of a Property/Casualty Actuary* (https://www.casact.org/library/studynotes/Odomirok-etal_Financial-Reportingv5.pdf), CAS 2020, page 10.
[15] *2021 NAIC Annual Statement Instructions Property/Casualty*. Section I.1.2

SAOs. Appendix IV provides the SSAPs from NAIC's Accounting Practices and Procedures Manual deemed to be particularly applicable to actuaries signing NAIC P&C SAOs.

Following the terminology in the NAIC Annual Statement Instructions, this practice note uses the term "loss reserves" to include LAE reserves unless specified otherwise.

1.6 Changes from the 2020 practice note

COPLFR has made enhancements to the 2021 practice note based on feedback from users and a thorough review by the committee. Changes to this year's practice note that are a result of new 2021 requirements from the ASB or NAIC (i.e., new or revised ASOP, NAIC Annual Statement Instructions, or SSAP) are highlighted in yellow, while additional discussion or clarifying edits are highlighted in gray. Changes to the 2021 practice note include:

- Review and update citations of 2021 version of NAIC documents (throughout):[16]
  - NAIC SAO Instructions (Appendix I.1)
  - AOWG Regulatory Guidance (Appendix II)
- Removed References to the CAS *Statement of Principles Regarding Property and Casualty Unpaid Claim Estimates*, which was rescinded by the CAS in December 2020.
- Review other activity of the NAIC as it may impact P&C Annual Statements and may be relevant to the work of the Appointed Actuary
  - Additional note in Section 5.3.1 regarding clarification in SSAP No. 55 as it pertains to salvage and subrogation recoveries including loss adjustment expenses.
- Additional discussion on Schedule P reconciliation (Section 3.7 and Section 8.5)
- Updates to section on considerations related to COVID-19 (Section 5.7)
- New section on company representations to the Appointed Actuary (Section 3.5.3)
- Update of external references and hyperlinks (throughout)
- Other minor edits (throughout)

After changes in 2019 related to the definition of a Qualified Actuary and in 2020 related to continuing education requirements and attestations, the only change to the NAIC SAO Instructions for 2021 was an editorial change to remove references to the CAS *Statement of Principles Regarding Property and Casualty Unpaid Claim Estimates* as discussed above.

The 2021 AOWG Regulatory Guidance has additional detail relating to regulator expectations for Schedule P reconciliations, notice of potential specificity on the deadlines for submitting Appointed Actuary qualification documentation to the Board of Directors (this would be effective in 2022), and other minor editorial changes.

[16] For information, the following NAIC documents had no changes from 2020 to 2021:
NAIC Property and Casualty AOS Instructions (Appendix I.2)
NAIC Title SAO Instructions (Appendix I.3)
NAIC Annual Statement Instructions—Excerpt Regarding Auditor Data Testing (Appendix I.4)

2. IDENTIFICATION section

This, the IDENTIFICATION chapter, is the first of four chapters (i.e., Chapter 2 through Chapter 5) in this practice note that discuss each of the four required sections of the Statement of Actuarial Opinion: IDENTIFICATION, SCOPE, OPINION, and RELEVANT COMMENTS (sections 3 through 6 of the NAIC SAO Instructions).

The SAO starts with an identification paragraph, which according to the NAIC SAO Instructions should:

> *"…indicate the Appointed Actuary's relationship to the Company, qualifications for acting as Appointed Actuary, date of appointment and specify that the appointment was made by the Board of Directors."*[17]

2.1 Appointment of the Qualified Actuary

According to the NAIC SAO Instructions,

> *"Upon initial engagement, the Appointed Actuary must be appointed by the Board of Directors by December 31 of the calendar year for which the opinion is rendered. The Company shall notify the domiciliary commissioner within five business days of the initial appointment with the following information:*
>
> *a. Name and title (and, in the case of a consulting actuary, the name of the firm).*
>
> *b. Manner of appointment of the Appointed Actuary (e.g., who made the appointment and when).*
>
> *c. A statement that the person meets the requirements of a Qualified Actuary (or was approved by the domiciliary commissioner) and that documentation was provided to the Board of Directors.*
>
> *Once this notification is furnished, no further notice is required with respect to this person unless the Board of Directors takes*

FAQ: Do actuaries need to be reappointed each year?

A: NAIC Instructions do not necessarily require the Appointed Actuary to be reappointed every year.

However, when the appointment is specific to the year-end in question, then reappointment would normally be necessary.

The most recent date of appointment (if there is more than one) may be quoted in the identification paragraph.

[17] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

action to no longer appoint or retain the actuary or the actuary no longer meets the requirements of a Qualified Actuary."[18]

The Appointed Actuary might consider obtaining and retaining documentation of his or her appointment, including the date of the appointment, as support for this statement. For this purpose, the Appointed Actuary may wish to retain materials such as minutes of the Board of Directors' meeting indicating the appointment or written confirmation by a company officer.

The term "Board of Directors" is used broadly throughout the 2021 NAIC SAO Instructions and specifically defined as *"Board of Directors can include the designated Board of Directors, its equivalent or an appropriate committee directly reporting to the Board of Directors."*[19] For example, an actuary may be appointed by the Audit Committee of the Board of Directors.

2.1.1 Illustrative language

In the case where the Appointed Actuary is a consultant, the following may be appropriate:

I, Jane Actuary [professional designation(s)], am associated with ABC Consulting. I was appointed by the Board of Directors of XYZ Insurance Company on November 3, 2020 to render this opinion. I meet the definition of a Qualified Actuary per the NAIC Annual Statement Instructions – Property and Casualty, Actuarial Opinion.

2.1.2 Definition of a Qualified Actuary

Paragraph 1A of the NAIC SAO Instructions sets out the requirements for an actuary to be qualified to sign SAOs:

"Qualified Actuary" is a person who:

(i) meets the basic education, experience and continuing education requirements of the Specific Qualifications Standard for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement, as set forth in the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States (U.S. Qualification Standards), promulgated by the American Academy of Actuaries (Academy), and

(ii) has obtained and maintains an Accepted Actuarial Designation; and

[18] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[19] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

(iii) *Is a member of a professional actuarial association that requires adherence to the same Code of Professional Conduct promulgated by the Academy, requires adherence to the U.S. Qualification Standards, and participates in the Actuarial Board for Counseling and Discipline when its members are practicing in the U.S.*

An exception to parts (i) and (ii) of this definition would be an actuary evaluated by the Academy's Casualty Practice Council and determined to be a Qualified Actuary for particular lines of business and business activities.[20]

FAQ: Does the definition of Qualified Actuary and other related requirements (e.g., Qualification Documentation) in the NAIC Property/Casualty Opinion Instructions apply to NAIC title insurers? What about captive insurers?

A: The definition of Qualified Actuary in the NAIC Title Opinion Instructions is different than what is presented in this section; the Title Instructions definition of Qualified Actuary has not recently changed. Additionally, the NAIC Title Opinion Instructions do not include reference to other requirements that were introduced in the 2019 NAIC Property/Casualty Opinion Instructions such as the qualification documentation discussed in section 2.2.1 herein. For informational purposes, the NAIC Title Opinion Instructions are included as Appendix I.3

For captive insurance company requirements, refer to captive laws and regulations of the specific captive domicile.

Special Situations:

- NAIC SAO Instructions state that in the case of:

  1. an Appointed Actuary meeting the definition of Qualified Actuary per the exception to parts (i) and (ii) via evaluation and determination by the Academy's Casualty Practice Council; or

  2. an Appointed Actuary not meeting the definition of Qualified Actuary but being approved by the domiciliary commissioner,

  "…the company must attach, each year, the approval letter and reference such in the Identification paragraph."

2.2 Qualifications

The Identification paragraph of the Opinion includes the Appointed Actuary's qualifications to sign the SAO. Before taking on or renewing an Appointed Actuary assignment, actuaries should review the

[20] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

definition of Qualified Actuary per the NAIC SAO Instructions and all other applicable qualification standards and ensure compliance.

Actuaries are reminded that the Academy promulgated amended *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States Including Continuing Education*

Requirements, effective January 1, 2008 (the "US Qualification Standards"). This practice note refers to NAIC SAOs as contemplated in Section 3 of the US *Qualification Standards.* The Appointed Actuary must meet the general and specific qualification standards, basic and continuing education (CE) requirements, and other requirements described therein.

The following table summarizes the applicable Qualification Standards.

NAIC SAOs **Overview of Applicable Qualification Standards**	
U.S. Qualification Standards – General[21]	• MAAA, FCAS, ACAS, FSA, or fully qualified member of another IAA-member organization • Three years of responsible actuarial experience, defined as work that requires knowledge and skill in solving actuarial problems • Knowledge of the applicable law through examination or documented professional development • And either: 1. Have attained highest possible level of membership in an IAA full-member organization and have one year responsible actuarial experience in the relevant area under the review of an actuary qualified to issue the SAO at the time the review took place under standards in effect at that time 2. Have a minimum of three years of responsible actuarial experience in the relevant area under the review of an actuary qualified to issue the SAO at the time the review took place under standards in effect at that time • 30 hours of "relevant" continuing education (CE) – >= 6 "organized activities" – >=3 professionalism

[21] Information presented here reflects the USQS effective January 1, 2008. The amended U.S. Qualification Standards take effect January 1, 2022, for statements of actuarial opinion issued on or after January 1,2023.

NAIC SAOs

Overview of Applicable Qualification Standards

- <=3 general business

3. Refer to https://www.actuary.org/content/us-qualification-standards

U.S. Qualification Standards – Specific

In addition to the requirements of the General Qualification Standard:

- Successfully complete relevant examinations administered by the Academy or the CAS on (a) policy forms and coverages, underwriting, and marketing; (b) principles of ratemaking; (c) statutory insurance accounting and expense analysis; (d) premium, loss, and expense reserves; and (e) reinsurance; OR obtain a signed statement from another actuary who is qualified to issue the SAO, NAIC P&C Annual Statement, indicating that the writer is familiar with the actuary's professional history and that the actuary has obtained sufficient alternative education to satisfy the basic education requirement for the specific qualification standard. This statement should be obtained before issuing a SAO.

4. Three years of responsible experience relevant to the subject of the SAO under the review of an actuary qualified to issue the SAO at the time the review took place under standards in effect at that time

5. Obtain 15 continuing education (CE) hours per year related directly to the particular topic

6. Minimum of 6 CE hours of "organized" activities related directly to the particular topic

7. Refer to https://www.actuary.org/content/us-qualification-standards

NAIC

- Meet U.S. Qualification Standards' Specific Qualification Standard for NAIC SAOs (or be evaluated by the Academy's CPC and determined to be a Qualified Actuary for particular lines of business and business activities)

- Obtained an "Accepted Actuarial Designation", as defined in the NAIC SAO Instructions (or be evaluated by the Academy's CPC and determined to be a Qualified Actuary for particular lines of business and business activities)

- Member of one of the following actuarial organizations – the American Academy of Actuaries, the ASPPA College of Pension Actuaries, the Casualty Actuarial Society, the Conference of Consulting Actuaries, and/or the Society of Actuaries. Each of these organizations:

NAIC SAOs Overview of Applicable Qualification Standards	
	– Require adherence to the Code of Professional Conduct; – Require adherence to the U.S. Qualification Standards; and – Are within the Actuarial Board for Counseling and Discipline's jurisdiction to investigate alleged violations of the Code of Professional Conduct • State requirements may vary • Refer to NAIC SAO Instructions; AOWG Regulatory Guidance; and the Academy's 2021 P/C Loss Reserve Law Manual
CAS	• The CAS Continuing Education Policy requires actuaries providing SAOs in the U.S. to comply with the U.S. Qualification Standards • Refer to http://www.casact.org/education/index.cfm?fa=ceinfo
SOA	• Refer to https://www.soa.org/professional-development/cpd-requirement/

2.2.1 Qualification Documentation

The NAIC SAO Instructions include the following description of the qualification documentation of how the Appointed Actuary meets the definition of "Qualified Actuary." Per the NAIC SAO Instructions:

> *The Appointed Actuary shall provide to the Board of Directors qualification documentation on occasion of their appointment, and on an annual basis thereafter, directly or through Company management. The documentation should include brief biographical information and a description of how the definition of "Qualified Actuary" is met or expected to be met (in the case of continuing education) for that year. The documentation should describe the Appointed Actuary's responsible experience relevant to the subject of the Actuarial Opinion. The Board of Directors shall document the Company's review of those materials and any other information they may deem relevant, including information that may be requested directly from the Appointed Actuary. The qualification documentation shall be considered workpapers and be available for inspection upon regulator request or during a financial examination.*[22]

[22] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

COPLFR understands that the intention of considering the qualification documentation to be work papers was to make the qualification documentation subject to the same confidentiality provisions as the Actuarial Report. The Appointed Actuary should review state laws for any specific situation.

The 2021 AOWG Regulatory Guidance, available in Appendix II, provides extensive guidance and sample language that Appointed Actuaries may find useful in drafting qualification documentation. However, note that the content, depth, and form of the qualification documentation are left to the discretion of the individual Appointed Actuary who must meet the requirements as cited above in the NAIC SAO Instructions.

The qualification documentation is to be provided on occasion of appointment so that the Board can make an informed decision regarding appointment. The Board is also required to document the company's review of the qualification documentation materials. As discussed in the FAQ at the beginning of this chapter, appointment does not necessarily have to re-occur each year.

The timing of providing qualification documentation to the company in years subsequent to the appointment ("on an annual basis thereafter") is not otherwise specified in the NAIC SAO Instructions. Appointed Actuaries may wish to provide the documentation subsequent to completion of their continuing education applicable for the year of the Opinion or prior to completion with description of how continuing education requirements are expected to be met. The 2021 AOWG Regulatory Guidance notes that a deadline may be established for submitting qualification documentation to the Board of Directors in the 2022 NAIC SAO Instructions.

FAQ: What are the requirements of the Appointed Actuary with respect to ensuring the Board of Directors reviews the actuary's qualification documentation?

A: The NAIC SAO Instructions require the actuary to provide his or her qualification documentation to the Board of Directors, directly or through company management. Presumably, the minutes of the Board of Directors meeting would document management's discussion of their review of the actuary's qualification documentation. The actuary is not obligated to take additional steps to ensure the company's review of this documentation.

COPLFR notes that there will be situations where the subject of the Opinion is an emerging risk or line of business where the actuary has minimal experience (e.g., the recent emergence of cyber liability). Experience with other risks as they emerged in the past and broad familiarity with the topic and the insurance coverages may satisfy the responsible experience requirement per the NAIC SAO Instructions. Consultation with the U.S. Qualification Standards may also be appropriate in this situation.

In some cases, a single actuarial report might support the Opinion for multiple individual companies (e.g., a group of companies participating in an intercompany pool; or a group of companies that write and/or retain different books of business). In these situations, a single qualification documentation may be appropriate which discusses the Appointed Actuary's responsible experience across the individual companies that comprise the actuarial report.

2.2.2 Accepted Actuarial Designation

The definition of a "Qualified Actuary" in the NAIC SAO Instructions include the requirement to obtain and maintain an "Accepted Actuarial Designation". Per the NAIC SAO Instructions:

> *"Accepted Actuarial Designation" in item (ii) of the definition of a Qualified Actuary, is an actuarial designation accepted as meeting or exceeding the NAIC's Minimum Property/Casualty (P/C) Actuarial Educational Standards for a P/C Appointed Actuary (published on the NAIC website). The following actuarial designations, with any noted conditions, are accepted as meeting or exceeding basic education minimum standards:*
>
> *(i)Fellow of the CAS (FCAS) – Condition: basic education must include Exam 6 – Regulation and Financial Reporting (United States);*
>
> *(ii) Associate of the CAS (ACAS) – Conditions: basic education must include Exam 6 – Regulation and Financial Reporting (United States) and Exam 7 – Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management;*
>
> *(iii) Fellow of the SOA (FSA) – Conditions: basic education must include completion of the general insurance track, including the following optional exams: the United States' version of the Financial and Regulatory Environment Exam and the Advanced Topics in General Insurance Exam.* [23]

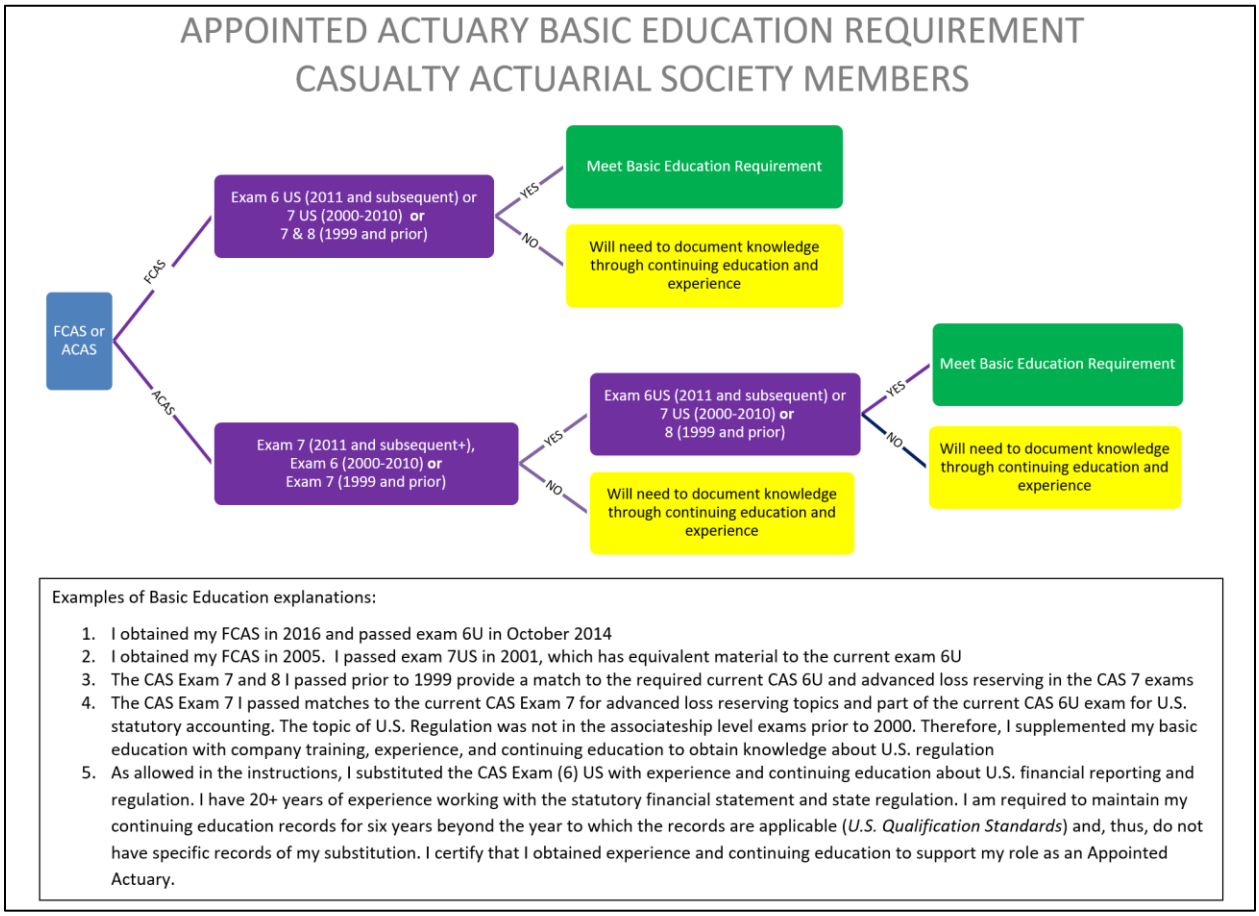
The NAIC SAO Instructions provide additional information regarding allowable substitutions for the specific exams cited in items (i), (ii), and (iii) above. This includes an exception to substitute experience and/or continuing education, but only for those who earned their FCAS or ACAS credential prior to 2021. Refer to the NAIC SAO Instructions attached hereto in Appendix I for details.

> ***FAQ: I am an ACAS or FCAS and do not have credit for Exam 6-US. How do I document my knowledge of U.S. P/C statutory accounting and regulation?***
>
> *A: The NAIC SAO Instructions note that the actuary "may substitute experience and/or continuing education for CAS Exam 6 (US) provided the Appointed Actuary explains in his/her qualification documentation how knowledge of U.S. financial reporting and regulation was obtained." The ability to substitute experience and/or continuing education in this manner applies only to individuals who earned their credential prior to 2021.*
>
> *The Appointed Actuary may wish to use language in their qualification documentation such as the following: "Knowledge relating to U.S. financial reporting and regulation was obtained through experience working as a credentialed actuary in the U.S. property/casualty insurance industry for over 30 years as well as obtaining relevant continuing education." Within the documentation, the AA may wish to expand on his/her experiences with U.S. financial reporting and regulation and relevant CE obtained in order to comply with the requirement.*

Refer to the CAS arc@casact.org or SOA customerservice@soa.org for any questions regarding exam transcripts to see if the basic education minimum standard is satisfied. The CAS provides exam

[23] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

transcripts for its members that reflect actual exam history and translation to exam credit under the current system. In addition, the CAS has published the flow chart below for its members.



Special Situations:

For an ACAS who received their credential under the current CAS syllabus but does not have credit for Exam 7, both the USQS Specific Qualification Standards and the definition of *Accepted Actuarial Designation* in the NAIC SAO Instructions may be relevant for further review.

The USQS Specific Qualification Standards for *Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement* name five areas in which the actuary must have completed relevant examinations, "(a) policy forms and coverages, underwriting, and marketing; (b) principles of ratemaking; (c) statutory insurance accounting and expense analysis; (d) premium, loss, and expense reserves; and (e) reinsurance". An actuary who has not successfully completed Exam 7 may not meet this requirement for all five areas. If the actuary believes he or she does meet this requirement through other means, Section 3.1.2 of the USQS discusses alternative basic education and required documentation thereof.

The NAIC SAO Instructions include a table within the definition of Accepted Actuarial Designation, which notes that an actuary with an ACAS credential "may substitute experience and/or continuing

education for CAS Exam 7 provided the Appointed Actuary explains in his/her qualification documentation how knowledge of the additional reserving topics in CAS Exam 7 (Section A) in the May 2019 syllabus was obtained." The ability to substitute experience and/or continuing education in this manner apply only to individuals who earned their credential prior to 2021.

2.2.3 Continuing Education Requirements per NAIC SAO Instructions

The NAIC SAO Instructions include a requirement on annually attesting to meeting continuing education requirements:

> *If subject to the U.S. Qualification Standards, the Appointed Actuary shall annually attest to having met the continuing education requirements under Section 3 of the U.S. Qualification Standards for issuing Actuarial Opinions. As agreed with the actuarial organizations, the Casualty Actuarial Society (CAS) and Society of Actuaries (SOA) will determine the process for receiving the attestations for their respective members and make available the attestations to the public. An Appointed Actuary subject to the U.S. Qualification Standards and not a member of the CAS or SOA shall select one of the above organizations to submit their attestation.*[24]

Related to the requirements in the paragraph above, the CAS and SOA each have online portals to attest to having met continuing education requirements:

- Certify Compliance with the CAS Continuing Education Policy
- SOA Continuing Professional Development Requirement

In addition to the CE Requirements of the USQS, the NAIC SAO Instructions note additional categorization of content in Appointed Actuary continuing education logs that are selected for review:

> *In accordance with the CAS and SOA's continuing education review procedures, an Appointed Actuary who is subject to the U.S. Qualification Standards and selected for review shall submit a log of their continuing education in a form determined by the CAS and SOA. The log shall include categorization of continuing education approved for use by the Casualty Actuarial and Statistical Task Force. As agreed with the actuarial organizations, the CAS and SOA will provide an annual consolidated report to the NAIC identifying the types and subject matter of continuing education being obtained by Appointed Actuaries. An Appointed Actuary subject to the U.S. Qualification Standards and not a member of the CAS or SOA shall follow the review procedures for the organization in which they submitted their attestation.*[25]

While the above paragraph references "a form determined by the CAS and SOA," COPLFR understands that Appointed Actuaries may add a column to their existing CE log indicating the categorization. A

[24] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[25] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

template of the optional form for data collection, along with additional information on the requirements, is available on the CAS website.

The Actuarial Opinion (C) Working Group's Regulatory Guidance document provides further discussion on this requirement:

> *For year-end 2020, Appointed Actuaries selected for review by the CAS or SOA must either use a specific logging format for their CE logs or add a column to one's current log. Appointed actuaries are encouraged to categorize their CE throughout the year, since waiting until the audit (if selected) may compromise the accuracy of categorization. While audited Appointed Actuaries will submit their individual logs, the CAS and SOA will only share aggregated information with the NAIC.*

The *Appointed Actuary CE Log Categories*, available on the NAIC website, are shown below. Per the NAIC SAO Instructions, an NAIC category is to be noted for continuing education activities that meet the Continuing Education Requirement of the Specific Qualification Standards (i.e., continuing education directly relevant to the topics identified in Section 3.1.1 of the USQS).

NAIC Appointed Actuary CE Log Categories:

1. *Law/Regulation*
2. *Policy form/coverage/underwriting/marketing*
   - *Form/Coverage*
   - *Premium rates/Ratemaking*
   - *Underwriting and/or marketing*
3. *Reinsurance*
   - *Statutory accounting*
   - *Reinsurance collectability*
   - *Reinsurance collateral*
   - *Reinsurance reserving*
4. *Reserves*
   - *Reserving data*
   - *Reserving adjustments*
   - *Reserving calculations*
   - *Reserving analysis*
   - *Statutory accounting*
5. *Requirements & Practice Notes*
   - *Annual Statement Instructions*
   - *Practice notes, ASOPs, etc.*
   - *Statutory accounting*
   - *Solvency calculations*
   - *Company-specific*
6. *Business Skills*
7. *Other*
   - *Accounting other than statutory*

FAQ: Does the Appointed Actuary have to meet a minimum number of hours for each of the NAIC Appointed Actuary CE Log Categories?

A: There are no requirements in terms of number of hours of CE in each category. The categories were part of a survey of knowledge that was conducted by the NAIC a few years ago. An expectation by category was not determined. Recording hours in these categories is at the request of the NAIC.

- *Analytics*
- *Emerging issues*
- *Modeling*
- *Professionalism (other than practice notes, ASOPs, etc.)*
- *Risk management*
- *"Describe in own words"*

Notes:

- A given CE activity may span multiple of the *NAIC Appointed Actuary CE Log Categories*. Potential options in this situation may be to a) enter the single category that is most applicable; or b) spread the CE activity across multiple entries on the CE log with the total minutes of the activity allocated to each relevant category. Further, the self-categorization of a given CE activity is judgmental, COPLFR is not aware of any expectation by the NAIC, CAS, or SOA of consistency between different Appointed Actuary CE logs.

2.3 Change in Appointed Actuary

NAIC SAO Instructions require a formal process for changing Appointed Actuaries. The steps are set out in paragraph 1 of the NAIC SAO Instructions. The process involves actions by the insurer and prior Appointed Actuary and is set into motion by the formal Board of Directors action replacing the Appointed Actuary. NAIC SAO Instructions state that:

1. ***Within five days of the action***, the company must advise the relevant domiciliary insurance department in writing of the change.

2. ***Within 10 days of the notification***, the company must write to the domiciliary Commissioner stating whether in the 24 months preceding the change "*there were any disagreements with the former Appointed Actuary regarding the content of the opinion on matters of the risk of material adverse deviation, required disclosures, scopes, procedure, type of opinion issued, substantive wording of the opinion or data quality. The disagreements required to be reported… include both those resolved to the former Appointed Actuary's satisfaction and those not resolved to the former Appointed Actuary's satisfaction.*"[26]

   The letter should list and describe such disagreements, as well as the nature of the resolution, or that the items were not resolved, as applicable.

FAQ: Could an actuary be appointed after year-end?

A: Under extraordinary circumstances (e.g., illness of prior Appointed Actuary), the appointment of a new actuary may occur after year-end. Companies would typically communicate with the regulator about the reasons for the late change.

[26] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

The letter must be accompanied by a response from the former Appointed Actuary addressed to the company *"stating whether the Appointed Actuary agrees with the statements contained in the Insurer's letter and, if not, stating the reasons for which he or she does not agree."*[27]

The 2021 AOWG Regulatory Guidance states *"While regulators are interested in material disagreements regarding differences between the former Appointed Actuary's final estimates and the insurer's carried reserves, they do not expect notification on routine discussions that occur during the course of the Appointed Actuary's work."*[28]

Note:

- It may be appropriate to also consider any disagreements related to the AOS, although the NAIC SAO and AOS Instructions do not state this explicitly.
- Newly appointed actuaries would typically request and review this correspondence as part of their pre-work.

[27] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[28] 2021 AOWG Regulatory Guidance (Appendix II).

3. SCOPE section

This, the SCOPE chapter, is the second of four chapters (i.e., Chapter 2 through Chapter 5) in this practice note that discuss each of the four required sections of the Statement of Actuarial Opinion: IDENTIFICATION, SCOPE, OPINION, and RELEVANT COMMENTS (sections 3 through 6 of the NAIC SAO Instructions).

The SCOPE section identifies both the reserve items upon which the Appointed Actuary is providing an opinion and also the basis for the presentation of those reserve items. The SCOPE section also identifies the *"review date."* The *"review date"* is defined in ASOP No. 36 as *"the date (subsequent to the valuation date) through which material information known to the actuary is included in forming the reserve opinion."*[29]

The NAIC SAO Instructions also indicate that the SCOPE should include a paragraph regarding the data relied upon in forming the opinion, including who provided the data and that the Appointed Actuary reconciled the data to Schedule P, Part 1 of the Company's Annual Statement.

Additionally, if the company participates in intercompany pooling, the Appointed Actuary discloses this in the SCOPE. This disclosure should include a description of the pool, an identification of the lead company, a listing of all companies with their state of domicile and pooling percentages. It must also discuss how the data used in the Appointed Actuary's analysis was reconciled to Schedule P (either on a pooled basis or for each company on its own).

3.1 Scope of SAO

The SCOPE section identifies the reserve items upon which the Appointed Actuary is providing an opinion. The reserve items may include

- Loss and LAE reserves;
- Retroactive reinsurance assumed reserves;
- Unearned premium reserves for P&C Long Duration Contracts;
- Unearned premium reserves for extended reporting endorsements, including, but not necessarily limited to those items included in Schedule P Interrogatory No. 1 of the company's Annual Statement; and,

FAQ: Is the Appointed Actuary required to opine on all of the reserve items listed in section 3.1 of this chapter?

A: No. The Appointed Actuary should identify those items that will be included within the scope of the opinion.

[29] Actuarial Standards Board, "ASOP No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves," http://www.actuarialstandardsboard.org/asops/statements-actuarial-opinion-regarding-propertycasualty-loss-loss-adjustment-expense-reserves/, December 2010, Section 2.10.

- Other reserve items for which the Appointed Actuary is providing an opinion.

These items, and their corresponding amounts, are listed in Exhibit A: Scope. Exhibit A: Scope and Exhibit B: Disclosures are two exhibits that are required to be attached to the Statement of Actuarial Opinion.

3.1.1 Discussion

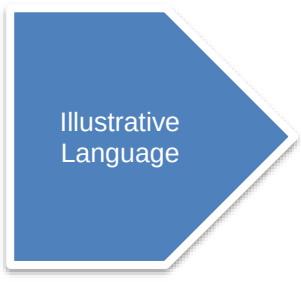
The Appointed Actuary should state that the items in the SCOPE, on which he or she is expressing an opinion, reflect Disclosure items 8 through 13.2 in Exhibit B. [30]

Note:

- The NAIC SAO Instructions intentionally excluded Items 13.3 and 13.4 from the above sentence (i.e., carried reserves for A&H Long Duration Contract unearned premium and Write-In Items, respectively). This is due to the Appointed Actuary not being asked to opine on the reasonableness of the reserves associated with A&H Long Duration Contracts except to the extent that the reserves are included within the amounts reported on Exhibit A.
- If the Appointed Actuary is not opining on certain items in Exhibit A: SCOPE (or a subset of those items), then the Appointed Actuary should clearly state this in the SCOPE section of the SAO. In this case, if the Appointed Actuary believes the excluded items could be material, the SAO would be "Qualified" and noted as such in item 4 of Exhibit B. (For further discussion on Qualified SAOs, please refer to Section 4.5 of this practice note.)

3.1.2 Illustrative Language

The following language may be appropriate:



I have examined the actuarial assumptions and methods used in determining the reserves listed in Exhibit A, as shown in the Annual Statement of the Company as prepared for filing with state regulatory officials, as of December 31, 2021. The reserves listed in Exhibit A, where applicable, include provisions for Disclosure items (disclosures 8 through 13.2) in Exhibit B.

[30] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

3.2 Stated basis of presentation

The SCOPE of the SAO should identify the basis upon which the reserves are stated. ASOP No. 36 explains that the stated basis of reserve presentation is:

> *"a description of the nature of the reserves, usually found in the financial statement and the associated footnotes and disclosures. The stated basis often depends upon regulatory or accounting requirements. It includes, as appropriate, the following:*
>
> *a. whether reserves are stated as being nominal or discounted for the time value of money and, if discounted, the items discounted (for example, tabular reserves only) and the stated basis for the interest rate (for example, risk-free rate, portfolio rate, or fixed rate of x%);*
>
> *b. whether the reserves are stated to include an explicit risk margin and, if so, the stated basis for the explicit risk margin (for example, stated percentile of distribution, or stated percentage load above expected);*
>
> *c. whether the reserves are gross or net of specified recoverables (for example, deductibles, ceded reinsurance, and salvage and subrogation);*
>
> *d. whether the potential for uncollectible recoverables is considered in the reserves, when recoverables are involved and, if so, the categories of such uncollectible recoverables considered and whether those categories reflect currently known collectibility concerns or potential ultimate collectibility concerns. Possible categories of uncollectibles include those related to disputes and those related to counterparties in financial difficulty (credit default);*
>
> *e. the types of unpaid loss adjustment expenses covered by the reserve (for example, coverage dispute costs, defense costs, and adjusting costs);*
>
> *f. when the opinion is only for a portion of a reserve, the claims exposure to be covered by the opinion (for example, type of loss, line of business, year, and state); and*
>
> *g. any other items that, in the actuary's professional judgment, are needed to describe the reserves sufficiently for the actuary's evaluation of the reserves."*[31]

FAQ: What is an accounting basis?

A: An accounting basis refers to the reporting principles underlying the presentation of the financial report. Two common examples are SAP (Statutory Accounting Principles) and GAAP (Generally Accepted Accounting Principles).

[31] Actuarial Standards Board, "ASOP No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves," http://www.actuarialstandardsboard.org/asops/statements-actuarial-opinion-regarding-propertycasualty-loss-loss-adjustment-expense-reserves/, December 2010, section 3.4.

3.2.1 Illustrative Language

The following language may be appropriate:

I have reviewed the December 31, 2021 loss and loss adjustment expense reserves recorded under U.S. Statutory Accounting Principles.

3.3 Intercompany pooling

For companies participating in an intercompany pool, the Appointed Actuary is required to include a description of the intercompany pool in the SAO. This could be included in the SCOPE. The following section discusses intercompany pooling and offers information regarding what may be included in this description.

According to the NAIC SAO Instructions,

> *"For each company in the pool, the Appointed Actuary shall include a description of the pool, identification of the lead company and a listing of all companies in the pool, their state of domicile and their respective pooling percentages.*
>
> *Exhibits A and B for each company in the pool should represent the company's share of the pool and should reconcile to the financial statement for that company."*[32]

FAQ: Is there a difference between intercompany pooling and intercompany reinsurance among affiliated carriers?

A: Yes! Please see the "Definition" section (3.3.1) below.

For companies that have a zero percent share and zero net reserves, the information for the lead company in the pool must be provided.

3.3.1 Definitions

Intercompany Reinsurance refers to a transaction whereby one company (the reinsurer), for a consideration, agrees to indemnify the other (ceding company) against all or part of the loss that the latter may sustain under the policy or policies that it has issued.

Intercompany Pooling in this context refers to business that is pooled among affiliated insurance companies who are party to a pooling agreement in which the participants receive a fixed and

[32] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

predetermined share of all business written by the pool. Intercompany pooling arrangements involve establishment of a conventional quota share reinsurance agreement under which all the pooled business is ceded to the lead entity and then retroceded back to the pool participants in accordance with their stipulated shares.

In addition to the discussion below, pooling is discussed in Appendix III.2 as well as in the AOWG Regulatory Guidance included as Appendix II. The reader is referred in particular to the AOWG Regulatory Guidance related to pooling arrangements in the Opinion paragraph (section 1C of the NAIC SAO Instructions).

Section 1C of the NAIC SAO Instructions was expanded in 2014 to apply to all companies that operate in an intercompany pooling agreement. Companies participating in intercompany pooling arrangements, regardless of their participation percentage, are required to include a description of the pool, identification of the lead company, and a listing of all companies in the pool. This listing is to include their state(s) of domicile and their respective pooling percentages in each of the SAOs.

Additionally, regardless of the company's participation percentage in the intercompany pool, each company is required to include in the Statement of Actuarial Opinion Exhibits A and B information reflective of their share. Companies having a zero (0) percent share are required to include relevant comments that relate to the risks of the lead pool member and are required to file Exhibits A and B of the lead company as an addendum to their SAO.

One of the following situations may present itself to the Appointed Actuary:

1. *An intercompany pooling agreement applies, the lead company retains 100 percent of the pooled business, and the other pool participants each retain 0 percent.*
   Schedule P for the lead company will contain the total gross and net reserves for the pool. The gross and net reserves in Schedule P for the other companies will be zero. Section 1C of the NAIC SAO Instructions and section 6 of the NAIC AOS Instructions apply.

2. *An intercompany pooling agreement applies, more than one pool participant retains a non-zero share of the pooled business, and other pool participants each retain 0 percent.*
   Schedule P, for each company that retains a non-zero share of the pooled business, will show its share of the gross and net reserves. The gross and net reserves in Schedule P for the other companies will be zero. Section 1C of the NAIC SAO Instructions and section 6 of the NAIC AOS Instructions apply.

3. *A reinsurance agreement applies, and the company (or companies) cedes 100 percent of its reserves under a reinsurance agreement.*
   Schedule P for the company (or companies) ceding 100 percent of its reserves shows gross reserves but zero net reserves. Paragraph 1C of the NAIC SAO Instructions and paragraph 6 of the NAIC AOS Instructions do not apply.

If it is unclear whether section 1C of the NAIC SAO Instructions applies, refer to the Financial Statement Note entitled *"Intercompany Pooling Arrangements*", read the contract itself, and/or contact the regulator

for the company's domiciliary state. The Appointed Actuary may refer to Appendix III.2 of this practice note for more information.

Note:

- Note the distinction between pooling to a 100 percent lead company with no retrocession and ceding 100 percent via a reinsurance agreement. Any reinsurance agreement with affiliates must be approved by the domiciliary regulator(s). The financial reporting depends on the approved filing - the regulator may approve an intercompany pooling arrangement or a reinsurance agreement – with the company required to follow the approval regardless of how a company views the contract.

3.3.2 Illustrative Language

The following language may be appropriate:

The Company is the lead member of an intercompany pooling agreement with its subsidiaries, DEF Insurance Company and GHI Insurance Company. Premiums and losses are allocated to the Company based on its assigned percentage to the total pool, XX%. Analysis of the reserve items identified in Exhibit A has been performed for all pool companies combined and allocated to the pool companies based on their pooling percentages. Any favorable or adverse development will affect pool members in a manner commensurate with their pool participation. The following is a listing of all companies in the pool, their respective pooling percentages, and their state of domicile:

ABC Insurance Company: 80%, New York
DEF Insurance Company: 15%, New York
GHI Insurance Company: 5%, New York

3.4 Review date

The SCOPE of the SAO also identifies the "review date." This section defines and discusses this topic.

3.4.1 Definitions

Review date is defined in ASOP No. 36 as:

> *"the date (subsequent to the valuation date) through which material information known to the actuary is included in forming the reserve opinion."*[33]

Note "review date" is a specific disclosure required for SAOs. "Information date" is a disclosure required for any Actuarial Communication, as discussed in ASOP No. 41, however, we believe the two terms are conceptually similar. According to ASOP No. 41:

> *"The actuary should communicate to the intended user the date(s) through which data or other information has been considered in developing the findings included in the report."*[34]

FAQ: Is the "review date" the same date that the Appointed Actuary issues the Opinion?

A: The "review date" is the date through which the Appointed Actuary considers material information in forming the reserve opinion. While it can be the date the Appointed Actuary signs the Opinion, it may in fact precede the signature date.

3.4.2 Discussion

The 2021 AOWG Regulatory Guidance, which can be found in Appendix II, notes that when the Appointed Actuary is silent regarding the review date, this can indicate either a review date that is the same as the date the SAO is signed or that the Appointed Actuary overlooked this disclosure. In instances in which the Appointed Actuary's review date is the same date that the SAO is signed, regulators suggest actuaries clarify that in the SAO. Such language may include, *"…and reviewed information provided to me through the date of this opinion."*[35]

3.4.3 Illustrative Language

The following language may be appropriate:

Illustrative Language

My review considered information provided to me through ([date] OR [the date of this opinion]).

[33] Actuarial Standards Board, "ASOP No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves," http://www.actuarialstandardsboard.org/asops/statements-actuarial-opinion-regarding-propertycasualty-loss-loss-adjustment-expense-reserves/, December 2010, Section 2.10.
[34] Actuarial Standards Board, "ASOP No. 41, Actuarial Communications, http://www.actuarialstandardsboard.org/asops/actuarial-communications/, December 2010, Section 3.4.5.
[35] 2021 AOWG Regulatory Guidance (Appendix II).

3.5 Provider of data relied upon by the Appointed Actuary

The NAIC SAO Instructions require that the SCOPE paragraph include a paragraph such as the following regarding the data used by the Appointed Actuary in forming the opinion:

> *"In forming my opinion on the loss and loss adjustment expense reserves, I relied upon data prepared by _____ (officer name and title at the Company). I evaluated that data for reasonableness and consistency. I also reconciled that data to Schedule P, Part 1 of the Company's current Annual Statement. In other respects, my examination included such review of the actuarial assumptions and methods used and such tests of the calculations as I considered necessary."*[36]

FAQ: What if the data is provided by a third party administrator rather than by an officer of the Company?

A: According to AOWG Regulatory Guidance, while it is informative to identify the third--party in the SCOPE, the regulated entity will be ultimately responsible for the data. Regulators expect that a Company official will be identified in the SCOPE paragraph.

3.5.1 Discussion

The Appointed Actuary should disclose the title of the officer of the company responsible for the data used by the Appointed Actuary in his/her analysis, in addition to the name of the officer. One or two officers of the regulated entity will usually be named in the SAO. The Appointed Actuary may also be the person responsible for the data.

3.5.2 Illustrative Language

The following language may be appropriate:

Illustrative Language

In forming my opinion on the loss and loss adjustment expense reserves, I relied upon data prepared by _____ (officer name and title at the Company).

3.5.3 Representations of the Company to Appointed Actuary

Although not explicitly referenced, nor required, in the NAIC SAO instructions or AOWG Regulatory Guidance, non-employee Appointed Actuaries often request a letter of representation from company management. Items that are cited in such letters could include the following:

[36] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

- Company-provided complete and accurate data necessary for Appointed Actuary to form Opinion (section 3.5.1)
- Information on events subsequent to loss data valuation date (section 3.4.1)
- Basis of carried reserves (e.g., net/gross of specified recoverable; gross/net of salvage/subrogation, discounting (section 5.3.2); risk margin; deductibles (section 5.3.7b)
- Changes in company methodology to determine carried reserves
- Assumed and ceded reinsurance program(s); existence of retroactive/financial reinsurance; reinsurance collectability (section 5.4.1)
- Participation in pools / associations (section 5.3.3)
- Existence of death, disability, or retirement "free" tail provisions (section 5.3.5)
- Existence of long-duration contracts (section 5.3.6); largest exposures

For Appointed Actuaries who are employees of the company, the items in the list above provide a good checklist of information about the company that is often requested in financial examinations. The NAIC Financial Analysis Handbook provides information about the regulatory financial examination process for insurance companies.

3.6 Evaluation of data for reasonableness and consistency

The NAIC SAO Instructions require the Appointed Actuary to evaluate the data relied upon in the analysis underlying the SAO. This statement normally means that the Appointed Actuary reviewed the data triangles, etc., used in the course of forming the SAO. During this review, the Appointed Actuary observes whether data points were found to be either outside the range of reasonable possibilities or internally inconsistent to a significant degree (or that appropriate adjustments have been reflected in the Appointed Actuary's analysis).

3.6.1 Discussion

The objective of the evaluation for reasonableness and consistency is to identify significant data errors that would ordinarily be observed by the Appointed Actuary in the course of analyzing the reserves.

Note ASOP No. 23, *Data Quality*, provides guidance on this issue; the Appointed Actuary is to comply with ASOP No. 23 when evaluating data.

FAQ: Is the actuary required to attest that no errors exist in the data examined?

A: No.

For purposes of compliance with the NAIC SAO Instructions, the following discussion is provided:

1. The key question in reviewing a specific, unusual data point is normally whether the data point is so unusual that it may indicate a possible data error of significance to the Appointed Actuary's SAO on the reserves or whether special attention should be taken with unusual but valid data. Data points that could reasonably result from random variations in claim experience or from normal coding errors (e.g., a small downward development in the number of claims reported for a particular accident year and line of business) generally need not be questioned. (Note: The Appointed Actuary may well inquire about the causes of unusual data points for purposes of evaluating the reserves.)

2. There may be inconsistencies in the data compilations used directly in the actuarial analysis. For example, if the Appointed Actuary is using a paid loss development method, the Appointed Actuary may choose to investigate significant atypical accelerations or decelerations in the development.

3. If data initially appeared to be unreasonable or inconsistent, but were either explained or adjusted satisfactorily, then the data does comport with a finding of reasonableness and consistency. There may be discussion within the Actuarial Report addressing these circumstances.

Note:

- If the Appointed Actuary identified the data as being unreasonable or inconsistent to a significant degree (relative to the Appointed Actuary's opinion on the reserves), and the apparent data problem was not resolved satisfactorily, some possible alternatives are as follows:
  - Do not rely on the data in question: If, in the Appointed Actuary's judgment, this causes a significant increase in the uncertainty inherent in the Appointed Actuary's opinion on the reserves, then the situation is typically described in the Statement of Actuarial Opinion and elaborated upon in the Actuarial Report, or
  - Conclude that an actuarial opinion cannot be formed based on the available data.

3.6.2 Illustrative Language

The following language may be appropriate:

Illustrative Language

I evaluated the data for reasonableness and consistency.

3.7 Reconciliation to Schedule P

The NAIC SAO Instructions require the Appointed Actuary to make a statement regarding the reconciliation of data relied upon in the analysis underlying the opinion to Schedule P of the company's Annual Statement. This statement is intended to mean the following:

A. "Schedule P reconciliations are expected to be performed on both a Direct & Assumed basis and a Net of Reinsurance basis. If circumstances specific to the company lead the Appointed Actuary to perform the reconciliation on only one basis, the rationale for this decision should be explained in the Actuarial Report."[37]

B. Each of the following types of data, if relied upon significantly in forming the actuarial opinion (on a Net of Reinsurance or a Direct & Assumed basis), were reconciled to Schedule P, Parts 1, 1A, ..., 1R (referred to collectively as Schedule P below): paid losses, incurred (case basis) losses, paid defense and cost containment expenses, incurred (case basis) defense and cost containment expenses, paid adjusting and other expenses, salvage and subrogation received, claim counts and earned premiums. "If the Appointed Actuary chooses not to reconcile certain data elements used in the analysis, such as claim counts, a brief explanation should be included in the Actuarial Report to make it clear that these elements were not inadvertently overlooked."[38]

C. The reconciliation of paid data consisted of comparing either (a) cumulative paid amounts, or (b) current calendar-year paid amounts obtained from the actuarial data to the analogous data from Schedule P, Part 1; the reconciliation of case basis reserves consisted of comparing the current year-end case basis reserves from the actuarial analysis to Schedule P, Part 1; the comparisons were completed in detail by line of business and year in which losses were incurred, to the extent that such detail was relied upon significantly and is provided in Schedule P.

FAQ: Should the reconciliation be performed at a level of detail and refinement identical to that displayed in the Statutory Annual Statement?

A: Not necessarily. See the discussion below.

D. The differences, if any, were deemed by the Appointed Actuary to be either insignificant or explainable by known causes that did not represent errors in the data relied upon by the Appointed Actuary (e.g., the case basis reserves for LAE were based on formulas that differed between the two sources). Per the AOWG Regulatory Guidance "When differences appear in the reconciliation but are viewed as immaterial by the Appointed Actuary, the Appointed Actuary should acknowledge the immateriality of the differences in the Actuarial Report in order to assure regulators that the Appointed Actuary is aware

[37] 2021 AOWG Regulatory Guidance (Appendix II).
[38] 2021 AOWG Regulatory Guidance (Appendix II).

of the differences and has considered the potential impact of the differences on the analysis underlying the Actuarial Opinion."[39] Per the NAIC SAO Instructions "… An explanation should be provided for any material differences."[40]

3.7.1 Discussion

Schedule P reconciliations often include complicated mapping of the data used by the Appointed Actuary to the data within Schedule P. Generally, the Appointed Actuary will put together exhibits and explanations that document this mapping. Regulators and other users of the report are interested in this level of detail and therefore, the Appointed Actuary should consider including within the report. The following discussion points are relevant to the process of mapping the data used in the analysis to Schedule P data.

1. The Appointed Actuary may use types of data that are not included in the above reconciliation (e.g., numbers of units of exposure, numbers of claims, policy limits distributions, and loss data for older years adjusted to reflect subsequent years' reinsurance retentions). Salvage and subrogation received would normally be reconciled if the losses are reviewed gross of salvage and subrogation and/or a separate analysis is performed for salvage and subrogation. Additionally, the Appointed Actuary may consider reconciling claim counts, if the method of counting claims is consistent between the reserve analysis data and Schedule P (e.g., per claim vs. per occurrence).

2. If data used by the Appointed Actuary are subdivided more finely than that in Schedule P (e.g., lines of business are subdivided, accident quarter detail is used, or the data are subdivided between pools and associations and other business), then the data relied upon may be aggregated to the level shown in Schedule P. Similarly, if the Appointed Actuary chooses to combine some Schedule P lines of business for purposes of the actuarial study, then the Schedule P data may be aggregated as needed for comparison.

3. If the data used by the Appointed Actuary are grouped in such a manner (e.g., by type of policyholder, with each type including subsets of two or more Schedule P lines of business) that those data and the Schedule P data require aggregation before being compared, then the data can be compared after minimal necessary aggregation. Alternatively, more finely detailed data may be compiled that, when aggregated in different ways, reproduce both the data used by the Appointed Actuary and the Schedule P data. A brief comment indicating the inability to compare data directly (i.e., before some aggregation of both the data used by the Appointed Actuary and Schedule P data) and the level at which the comparison was performed may be included in the Statement of Actuarial Opinion and may be elaborated upon in the Actuarial Report.

4. If adjustments were made to the data for purposes of the actuarial analysis (e.g., to put older years on a basis more similar to recent years or for purposes of projecting the recent years), the data before adjustment often can be compared against Schedule P.

[39] 2021 AOWG Regulatory Guidance (Appendix II).
[40] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

5. If, as is common, the adjusting and other loss expense data used by the Appointed Actuary were grouped by payment year, not subdivided by accident year, then it typically would be appropriate for the latest calendar year's payments (not in detail by accident year) to be compared by line of business, allowing variations in line-of-business groupings as discussed above.

6. If any paid or case-incurred loss or LAE data that were relied upon significantly cannot be compared in detail by line of business and year for reasons other than those in notes (2) through (5) above (e.g., if the data used in the actuarial analysis were grouped by policy year), then this may be indicated in the Statement of Actuarial Opinion and may be elaborated upon in the Actuarial Report. If it is not possible to compare the data with Schedule P by year, the data may be compared with Schedule P on an all-years-combined basis. This may be appropriate for calendar-year paid losses, calendar-year defense and cost containment expenses, current year-end case basis loss reserves, and current year-end case basis defense and cost containment expense reserves.

7. If any loss or LAE data corresponding to the prior year's line of Schedule P were relied upon significantly, such data may be compared to Schedule P on an all-years combined basis. This comparison may include calendar-year paid losses, calendar-year paid defense and cost containment expenses, current year-end case basis loss reserves, and current year-end case basis defense and cost containment expense reserves. This may be the case for a discontinued line of business.

8. As with other aspects of the work underlying the Statement of Actuarial Opinion, if the reconciliation was performed by someone other than the Appointed Actuary, the Appointed Actuary should review the methodology used in the reconciliation and its results but need not have personally done or checked the calculations.

9. The Appointed Actuary's analysis may be based primarily on data evaluated earlier than year-end (e.g., Oct. 31). If actual year-end data are not used as the base for projection of the outstanding amounts then, in forming the opinion on year-end reserves, the Appointed Actuary would typically compare the actual year-end data against expected year-end values based on the earlier evaluation. The data source used for the analysis would typically still be reconciled to Schedule P.

10. The Actuarial Report ordinarily contains a description of the comparison performed and of any data that were relied upon significantly but could not be compared against Schedule P.

11. Upon completion of the Schedule P reconciliation, if , after attempting to resolve the differences, significant, unexplained differences remain between the data used by the Appointed Actuary and those shown in Schedule P, the Appointed Actuary may choose to do the following:

    a. Confirm that the person(s) responsible for the data used by the Appointed Actuary and the person(s) responsible for the data in Schedule P are aware of the differences. (They ordinarily will have learned of the differences in the course of the Appointed Actuary's efforts to resolve them.)

b. Recommend that the company inform its outside auditors of the unexplained differences.

c. Discuss the situation in the Statement of Actuarial Opinion and elaborate on it in the Actuarial Report. Note ASOP No. 36 *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* provides guidance on this issue; the Appointed Actuary is to comply with ASOP No. 36 when determining the type of Opinion to be rendered.

d. The NAIC SAO Instructions require that the Appointed Actuary include an explanation in the Actuarial Report for any material differences in the Schedule P Reconciliation.

12. According to the 2021 AOWG Regulatory Guidance, if immaterial differences exist, these should be acknowledged by the Appointed Actuary in the Actuarial Report to assure users of the report that the Appointed Actuary is aware of the differences and has considered the potential impact of the differences on the analysis underlying the Actuarial Opinion.

3.7.2 Illustrative Language

The following language may be appropriate:

I also reconciled that data to Schedule P – Part 1 of the Company's current Annual Statement.

OR

I also reconciled that data to Schedule P – Part 1 of the Company's current Annual Statement. The data generally reconciled with one exception: The total amount of Company XXX's paid loss differs by $21,000. This difference results from rounding and is not material.

3.8 Data testing requirement

The data testing requirement has been in effect for several years and is specified in the Annual Audited Financial Reports section of the NAIC Annual Statement Instructions. This is included in Appendix I.4 of this practice note. According to this requirement, "through inquiry of the Appointed Actuary, the auditor should obtain an understanding of the data identified by the Appointed Actuary as significant."[41] The auditor's responsibility is to determine which data elements are to be included in the testing procedures within the scope of the financial statement audit.

[41] 2021 NAIC Data Testing Requirement (Appendix I.4)

Note that a similar data testing paragraph can be found in the NAIC Annual Statement Instructions for title insurance companies.

3.8.1 Discussion[42]

As noted above, the 2021 NAIC SAO Instructions include a data testing paragraph in the Annual Audited Financial Reports section. This statutory guidance is included in Appendix I.4 and referred to as *the data testing requirement* in this document. The NAIC Annual Statement Instructions further address the auditor's review of data used by the Appointed Actuary.

The data testing requirement ensures that the auditor will become aware of the data and/or data elements that the Appointed Actuary identifies as being significant.

The term *significant* is not defined within the data testing requirement; the opining actuary should determine a meaning of *significant* that is best suited for the situation that is the subject of the SAO. COPLFR believes that a data item or attribute would normally be considered to be *significant* to the actuary's reserve evaluation[43] if, in the Appointed Actuary's professional judgment, a material error in the data item or attribute in the reserve evaluation is likely to have a material effect on the SAO. Examples of a *material effect* might include a change in the type of SAO rendered (reasonable, qualified, redundant, deficient, or no opinion) or the presence or absence of a risk of material (RMAD) adverse deviation. (Note: The ASB has not adopted a specific definition of *significant* as it pertains to this data testing requirement, hence the meaning of *significant* suggested by COPLFR in this paragraph is not binding on any actuary.)

FAQ: What data are in scope vs. out of scope of the data testing requirement?

A: Upon request from the auditor, the Appointed Actuary identifies the data they have deemed significant to the analysis in support of the SAO. However, it is the auditor's responsibility to determine which data elements are to be included in the testing procedures within the scope of the financial statement audit.

Once the auditor has obtained an understanding of the data identified by the Appointed Actuary as being significant, the auditor will determine the scope of testing procedures for purposes of assessing "whether the data tested is fairly stated in all material respects in relation to the statutory financial statement taken as a whole."[44]

The auditor may not test all data identified by the Appointed Actuary as significant each year. The level of testing is a matter of auditor judgment and depends on the auditor's assessment of materiality and other considerations. The Appointed Actuary is relying on management for the fair presentation of the data. The

[42] Note that COPLFR generated this section after discussions with the American Institute of Certified Public Accountants (AICPA), the NAIC/AICPA Working Group and the NAIC Casualty Actuarial and Statistical Task Force (CASTF). Actuaries are not normally trained to define or specify audit procedures and therefore look to insurance companies and their auditors as having the ultimate responsibility for determining how to comply with the data testing requirement. Questions about the data testing requirement as it relates to specific companies should be directed to the companies' domiciliary regulators.
[43] Note the definition of reserve evaluation per ASOP 36, "The process of evaluating the reasonableness of a reserve."
[44] 2021 NAIC Data Testing Requirement (Appendix I.4)

Appointed Actuary is not required to follow up with the auditor as to what data has been tested, or to disclose such information in the opinion or report.

As an accommodation, Appointed Actuaries often provide a letter addressed to company management, with a copy to the company's financial statement auditors, identifying the data that the Appointed Actuary deems significant to his/her reserve evaluation. An example of such letter is included in the illustrative language section below. While there is no requirement to this effect, written communication among the Appointed Actuary, the company's management, and the company's auditor, to be retained for a reasonable time period, may help clarify information and create a documentation trail.

The Appointed Actuary should not be limited in the use of various reserving methods or data by the original list of significant data provided. If the Appointed Actuary materially changes his/her view of what is significant based upon work the Appointed Actuary performs subsequent to providing the data letter to the auditor and management, it is likely appropriate to discuss these changes with both company management and the auditor.

Appointed Actuaries may meet with the company's management and its financial statement auditors to discuss the data in greater depth. Note, ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Statements for All Practice Areas*, provides guidance to actuaries on responding to or assisting auditors in connection with financial statements.

Actuaries may also wish to consult ASOP No. 23, *Data Quality*, regarding the nature and boundaries of the Appointed Actuary's responsibilities regarding data quality.

3.8.2 Illustrative Language

The following provides one possible example of a letter the Appointed Actuary may wish to issue to company management (typically with a copy to the auditor) regarding items significant to the reserve evaluation supporting the SAO. Significant data and attributes will vary depending on the circumstances of a particular assignment and may call for varying approaches to compliance with the NAIC's requirements. There is no requirement that the Appointed Actuary use this letter or any of the specific language or provisions it contains, or to identify the lines of business or attributes used as examples as significant. If the Appointed Actuary chooses to issue such a letter, consideration will be made of the facts and circumstances of a particular company; entirely different language may be used. The Appointed Actuary may wish to consult with legal counsel on the contents of such a letter and/or concerning the specific provisions of the NAIC's data testing requirements.

Dear CFO:

I understand that ABC CPA has been appointed to audit XYZ Insurance Company's financial statements for the year ended December 31, 2021. I understand that the NAIC Annual Statement Instructions direct insurers to require that the auditor subject the data used by the Appointed Actuary to testing procedures. As the Appointed Actuary of XYZ, I am providing this letter to communicate what data and attributes I believe to be significant to my analysis in support of the XYZ Statement of Actuarial Opinion (SAO).

In this letter, a data item or attribute would normally be considered to be "significant" to my analysis of loss reserves if, in my professional judgment, a material error in the data item or attribute in the loss reserve analysis is likely to have a material effect on the opinion. Examples of "material effect" might include a change in the type of opinion rendered (reasonable, qualified, redundant, deficient, or no opinion) or the presence or absence of a risk of material adverse deviation.

As of the date of this letter, I expect my analysis of loss and loss adjustment expense reserves to be based on the following data:

1. *Direct and Ceded Paid Loss and Defence and Cost Containment Expense (DCC) by reviewed line of business and by accident year, at annual evaluations as of XX/XX/2021. For Workers' Compensation, these data are also split to Medical vs. Indemnity. For Commercial Multi-Peril, these data are also split to Property vs. Liability.*
2. *Direct and Ceded Case Reserves for Loss by reviewed line of business and by accident year, at annual evaluations as of XX/XX/2021. For Workers' Compensation, this data is also split to Medical vs. Indemnity. For Commercial Multi-Peril, these data are also split to Property vs. Liability.*
3. *Direct and Ceded Earned premium by reviewed line of business by calendar year as of XX/XX/2021.*
4. *Reported Claim Counts by reviewed line of business and by accident year, at annual evaluations as of XX/XX/2021, for the following lines of business: Workers' Compensation and Personal Auto Liability. For Workers' Compensation, these data are also split to Medical vs. Indemnity.*
5. *Direct Paid Adjusting and Other Expense (AOE) by calendar year as of XX/XX/2021. I believe the Workers' Compensation and Commercial Multi-Peril lines of business to be most significant with respect to the SAO.*

The attributes that are significant with respect to the above items are as follows:

- *For items 1 through 4, the assignment to line of business and accident year.*
- *For items 1, 3 and 4, the annual amounts of premiums, payments or reported claims.*
- *For item 2 the amount of reserves at XX/XX/2021.*

- *For items 1, 2 and 4, the split for Workers' Compensation of Medical vs. Indemnity.*
- *For items 1, 2 and 4, the split for Commercial Multi-Peril of Property vs. Liability.*

The data used in support of the SAO come to me from the Analyst of XYZ and are generally provided on the 10th workday following the close of the year. Direct AOE is provided by the Controller of XYZ. I have attached an extract of last year's data files, highlighted to show the data fields that I used for last year's review.

The decision to designate the items listed in this letter as "significant" was based upon my professional judgment and my understanding of XYZ's operations at this time as represented to me by XYZ's management. This listing is intended solely for the use of XYZ and its auditors, and should not be used or relied upon by any other party or for any other purpose. This listing does not indicate in any way that all of these items will, in fact, prove to be significant to the Company's reserves or that additional items not specified here will not be identified at some time in the future as having been a significant influence on the Company's reserves. The above list was based on my work for XYZ in prior years, and is subject to change during the course of my review. If I become aware of additional data items that are significant to my review of reserves as of December 31, 2021, I will notify you and, with your concurrence, inform ABC accordingly.

I will rely upon the data identified in this letter when performing my analysis. Any significant discrepancies discovered in the data identified in this letter should be communicated to me by XYZ as soon as possible so that my analysis can be amended accordingly.

I would be happy to meet with you and ABC and answer any questions you may have. Please contact me after you have had a chance to review this letter.

Yours truly,
The Actuary

cc: The Partner, ABC CPA

3.9 Methodology

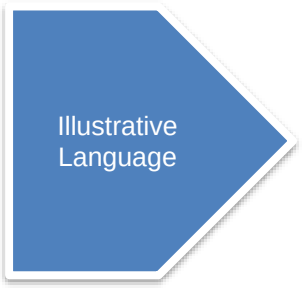
The NAIC SAO Instructions state that the SCOPE paragraph should include a statement regarding the examination of the assumptions and methodology underlying the company's recorded reserves.

3.9.1 Discussion

Certain states may interpret the NAIC SAO Instructions literally and expect the Appointed Actuary to have examined the company's methodology for determining its reserves. The Appointed Actuary may need to perform additional work to comply with that state's interpretation, particularly when not an employee of the company.

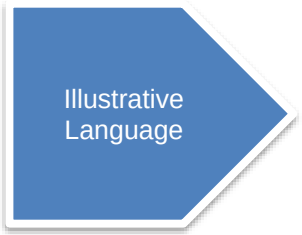
3.9.2 Illustrative Language

If the Appointed Actuary examined the assumptions and methodology underlying the company's recorded reserves, the following wording may be appropriate (as shown in 3.1.2), absent any circumstances that may warrant the use of alternative language:



I have examined the actuarial assumptions and methods used in determining reserves listed in Exhibit A, as shown in the Annual Statement of the Company as prepared for filing with state regulatory officials, as of December 31, 2021, and reviewed information provided to me through XX/XX/2021 …my examination included such review of the actuarial assumptions and methods used and such tests of the calculations as I considered necessary.

If the Appointed Actuary did not review the methods and assumptions used in determining the reserves but rather performed independent tests to evaluate the reserves, wording similar to the following may be appropriate in place of the SCOPE paragraph of the NAIC SAO Instructions (above):



I have examined the reserves listed in Exhibit A, as shown in the Annual Statement of the Company as prepared for filing with state regulatory officials, as of December 31, 2021, and reviewed information provided to me through XX/XX/2021…my examination included the use of such actuarial assumptions and methods and such tests of the calculations as I considered necessary.

If there is some segment of the associated reserve amounts for which the Appointed Actuary is not giving an opinion, such qualification may be stated here. This would be a qualified SAO in accordance with ASOP No. 36, which requires the Appointed Actuary to indicate the segment of business and the associated reserve amounts. The Appointed Actuary is referred to Section 4.5 for a detailed discussion of what constitutes a qualified SAO.

4. OPINION section

This, the OPINION chapter, is the third of four chapters (i.e., Chapter 2 through Chapter 5) in this practice note that discuss each of the four required sections of the Statement of Actuarial Opinion: IDENTIFICATION, SCOPE, OPINION, and RELEVANT COMMENTS (sections 3 through 6 of the NAIC SAO Instructions).

According to NAIC SAO Instructions,

> *The OPINION paragraph should include a sentence that at least covers the points listed in the following illustration:*
>
> > *"In my opinion, the amounts carried in Exhibit A on account of the items identified:*
> >
> > *A. Meet the requirements of the insurance laws of (state of domicile).*
> >
> > *B. Are computed in accordance with accepted actuarial standards.*
> >
> > *C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements."*
>
> *If the Scope includes material Unearned Premium Reserves for P&C Long Duration Contracts or Other Loss Reserve items on which the Appointed Actuary is expressing an opinion, the Actuarial Opinion should contain language such as the following:*
>
> > *D. "Make a reasonable provision for the unearned premium reserves for P&C Long Duration Contracts and/or <insert Other Loss Reserve item on which the Appointed Actuary is expressing an Opinion> of the Company under the terms of its contracts and agreements.*
>
> *If there is any aggregation or combination of items in Exhibit A, the opinion language should clearly identify the combined items."*[45]

Each of these items is discussed in detail in this chapter.

When the reserve estimate is subject to an exceptionally high degree of variability, or when a reasonable fluctuation in reserves can have a material effect on surplus, the Appointed Actuary may choose to discuss this in the SAO. More discussion is in the RELEVANT COMMENTS chapter of this practice note.

[45] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

4.1 Meet the relevant state laws

Section 5(A) of the NAIC SAO Instructions requires an opinion that the reserves meet the requirements of the insurance laws of the state of domicile.

4.1.1 Discussion

The insurance laws of the states are generally interpreted to include statutory accounting requirements. Thus, to comply with insurance law, reserves ordinarily represent management's best estimate.

Insurance laws and regulations shall at all times take precedence over the actuarial standards.

Management is required to record its best estimate of reserves by line of business and in total in the statutory accounts. The Appointed Actuary should consider that management's obligations in this regard may be different than the Appointed Actuary's. The Appointed Actuary is required in sections 5(B) and 5(C) of the NAIC SAO Instructions to opine on the reasonableness of the reserves in the aggregate.

FAQ: How can I find the relevant state laws?

A: There are several resources that may be used to find relevant state laws. The American Academy of Actuaries' 2021 P/C Loss Reserve Law Manual is one resource (see note below). In addition, state insurance laws are often available on the website of the particular state regulatory authority. One can also contact the applicable state regulator directly to obtain that state's insurance laws. The responsibility to identify all relevant state laws rests with the individual actuary and legal counsel should be consulted where the actuary is unable to identify all relevant state laws.

Note:

- The Academy's 2021 P/C Loss Reserve Law Manual provides a compilation of state regulatory requirements concerning P&C loss reserves. The Law Manual is updated annually and available for purchase from the Academy.

4.1.2 Illustrative language

The following language may be appropriate:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of (state of domicile).

B. Are computed in accordance with accepted actuarial standards.

C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements

.

4.2 Accepted actuarial standards

The NAIC SAO Instructions state that the OPINION paragraph should include a sentence that the amounts identified in Exhibit A are computed in accordance with accepted actuarial standards.

4.2.1 Discussion

As discussed in section 3.9, *Methodology*, the ability to make this statement depends on the Appointed Actuary's role in reviewing the reserves. The Appointed Actuary may instead perform an independent analysis of the reserves.

If a state were to interpret the NAIC SAO Instructions literally it might expect the Appointed Actuary to have examined the company's methodology for determining its reserves. The Appointed Actuary would need to perform additional work if required to comply with the relevant state's interpretation.

Note:

- Insurance laws and regulations take precedence over the actuarial standards. The Code of Professional Conduct states, for example: "Laws impose obligations upon an Actuary. Where requirements of Law conflict with the Code, the requirements of Law shall take precedence."

4.2.2 Illustrative language

The following wording may be appropriate in situations where the Appointed Actuary reviewed the assumptions and methods used in setting the recorded reserves, assuming it is factually correct:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of (state of domicile).
B. Are computed in accordance with accepted actuarial standards.
C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements.

In situations in which the Appointed Actuary performs an independent analysis of the reserves, the opinion statement in 5(B) of the NAIC SAO Instructions may read:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of (state of domicile).
B. Are consistent with reserves computed in accordance with accepted actuarial standards.
C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements.

4.3 Reasonable opinion

There are five possible types of SAOs: Reasonable, Inadequate/deficient, Redundant/excessive, Qualified, or No opinion. The type of SAO must be explicitly identified in item 4 of Exhibit B as follows:

- R if Reasonable
- I if Inadequate or Deficient Provision
- E if Excessive or Redundant Provision
- Q if Qualified, including the situation when part of the OPINION is Qualified
- N if No Opinion

This section of Chapter 4 discusses the reasonable type of SAO. Sections 4.4 through 4.6 discuss the other types of SAOs.

The NAIC SAO Instructions explain the determination of a reasonable SAO as follows:

> *"When the carried reserve amount is within the Appointed Actuary's range of reasonable reserve estimates, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount makes a reasonable provision for the liabilities associated with the specified reserves."*[46]

FAQ: What if the Appointed Actuary concludes that the net loss reserves and the direct-plus-assumed loss reserves make reasonable provisions for the unpaid loss and LAE obligations of the company, but amounts booked for certain subsets of the carried reserves do not, in isolation, make reasonable provisions for the associated portions of the company's obligation?

A: The determination of whether to issue a deficient/inadequate opinion is based upon the overall evaluation of the loss reserves as disclosed in the SCOPE paragraph of the SAO as discussed in Chapter 3. For this purpose, it may not be relevant whether the actuary believes that each subset of the reserves makes a reasonable provision for the associated obligations, as long as the carried reserve amount is reasonable in the aggregate. However, the Actuary would still need to assess whether the reserves are stated in accordance with the laws of the state of domicile and accepted actuarial standards.

4.3.1 Definitions

ASOP No. 36, section 3.7, states that an actuary should consider a reserve to be reasonable if it is within a range of estimates that could be produced by an unpaid claim estimate analysis that is, in the actuary's professional judgment, consistent with both ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*, and the identified stated basis of reserve presentation.

4.3.2 Discussion

If the Appointed Actuary reaches different conclusions regarding the SCOPE items, e.g., the determination of a reasonable provision for net reserves versus a determination of a redundant provision

[46] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

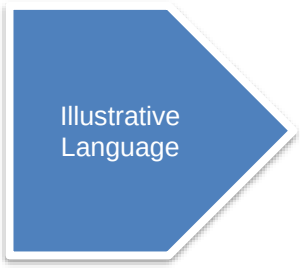
for gross reserves (direct plus assumed reserves), then the SAO would usually include language that explicitly conveys the intended category of SAO for each of the SCOPE items.

Note:

- If the Appointed Actuary reaches different conclusions regarding net reserves versus gross reserves (direct plus assumed reserves), then item 4 in Exhibit B ordinarily would reflect the SAO category for net reserves. In this situation the Appointed Actuary would be expected to include discussion about both gross and net in the SAO.
- The range of reasonable estimates typically is narrower, perhaps considerably, than the range of possible outcomes of the ultimate settlement value of the reserve.
- A reserve booked outside the bounds of the range of reasonable estimates would not normally make a reasonable provision for all unpaid loss and LAE obligations. The Appointed Actuary will be guided by ASOP No. 36.

4.3.3 Illustrative language

The following language may be appropriate:



In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of [state of domicile].
B. Are consistent with reserves computed in accordance with accepted actuarial standards.
C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements.

In situations in which the Appointed Actuary reaches different conclusions regarding the SCOPE items, e.g., the determination of a reasonable provision for net reserves versus a determination of a redundant or deficient provision for gross reserves (direct plus assumed reserves), the opinion statement in 5(C) of the NAIC SAO Instructions may be appropriate:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of [state of domicile].
B. Are consistent with reserves computed in accordance with accepted actuarial standards.

C. Make a reasonable provision for all net unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements, but a deficient [or redundant] provision on a gross of reinsurance basis. The provision for all gross unpaid losses and loss adjustment expenses is $X less than [or greater than] the minimum [or maximum] amount I consider necessary to be within the range of reasonable estimates.

4.4 Inadequate/deficient opinion or excessive/redundant opinion

The NAIC SAO Instructions explain the determination of an inadequate/deficient SAO as follows:

> *"When the carried reserve amount is less than the minimum amount that the Appointed Actuary believes is reasonable, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the Appointed Actuary should disclose the minimum amount that the Appointed Actuary believes is reasonable."*[47]

In addition, the determination of an excessive/redundant SAO is explained in the NAIC SAO Instructions as follows:

> *"When the carried reserve amount is greater than the maximum amount that the Appointed Actuary believes is reasonable, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the Appointed Actuary should disclose the maximum amount that the Appointed Actuary believes is reasonable."*[48]

Further, ASOP No. 36 contains specific disclosure requirements for SAOs where the actuary determines the reserve amount is inadequate or deficient.

[47] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[48] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

4.4.1 Definitions

To determine whether the reserves make a reasonable provision for all unpaid loss and LAE obligations, the Appointed Actuary can refer to ASOP No. 36.

4.4.2 Discussion

ASOP No. 36, section 4.2.b requires disclosure of the minimum amount the Appointed Actuary believes is reasonable, if the actuary determines the reserve is deficient or inadequate; section 4.2.c requires disclosure of the maximum amount the Appointed Actuary believes is reasonable, if the actuary determines the reserve amount is redundant or excessive. NAIC SAO Instructions are consistent with these requirements.

Note:

- As noted in section 3.7.1 of ASOP No. 43, Property/Casualty Unpaid Claim Estimates, the reasonableness of an unpaid claim estimate should be determined based on facts known to and circumstances known to or reasonably foreseeable by the Appointed Actuary at the time of the evaluation.
- The minimum amount the Appointed Actuary believes is reasonable is not synonymous with the lowest possible amount. Likewise, the maximum amount the Appointed Actuary believes is reasonable is not synonymous with the highest possible amount.
- If the opinion is that reserves are anything other than “reasonable,” the Appointed Actuary may want to reconsider whether the carried amounts being opined on meet the first two points of the OPINION paragraph, namely that they meet the requirements of the insurance laws and are consistent with reserves computed in accordance with accepted actuarial standards.

4.4.3 Illustrative language

The following language may be appropriate:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of (state of domicile).
B. Are consistent with reserves computed in accordance with accepted actuarial standards.

C. Make an inadequate [or excessive] provision for the unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements. The provision for unpaid losses and loss adjustment expenses is $X less [greater] than the minimum amount I consider necessary to be within the range of reasonable estimates.

4.5 Qualified opinion

The NAIC SAO Instructions explain the determination of a qualified SAO as follows:

> *"When, in the Appointed Actuary's opinion, the reserves for a certain item or items are in question because they cannot be reasonably estimated or the Appointed Actuary is unable to render an opinion on those items, the Appointed Actuary should issue a qualified Statement of Actuarial Opinion. The Appointed Actuary should disclose the item (or items) to which the qualification relates, the reason(s) for the qualification and the amounts for such item(s), if disclosed by the Company. Such a qualified opinion should state whether the carried reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item (or items) to which the qualification relates. The Appointed Actuary is not required to issue a qualified opinion if the Appointed Actuary reasonably believes that the item or items in question are not likely to be material."*[49]

ASOP No. 36 contains specific disclosure requirements for qualified SAOs.

4.5.1 Discussion

According to ASOP No. 36, the Appointed Actuary is to issue a qualified SAO when, in the Appointed Actuary's opinion, the reserves for a certain item or items are in question because they cannot be

[49] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

reasonably estimated, or the Appointed Actuary is unable to render an opinion on those items[50]. Examples of situations in which this may occur are as follows:

1. An actuary identifies a portion of the business that may be material to loss reserves, but there is insufficient information with which to perform a quantitative review or draw a conclusion about materiality. The actuary discloses this in the opinion and the supporting report. The opinion is qualified to exclude this portion of the business.

2. An actuary identifies a portion of the business that is material to loss reserves, but there is insufficient information with which to perform a review. The actuary discloses this in the opinion and the supporting report. The opinion is qualified to exclude this portion of the business.

3. A portion of the business is deemed to be outside the scope of the actuary's review. For example, a different actuary reviews and opines on reserves for the accident and health line of business. The actuary discloses this in the opinion and supporting report. The opinion is qualified to exclude this portion of the business. If the actuary has information regarding the materiality of the business, the actuary typically discloses this information in the opinion

If the SAO is qualified, the Appointed Actuary is required to explicitly state in the OPINION paragraph that it is a qualified opinion and properly disclose it as such in Exhibit B, item 4. Additionally, the OPINION paragraph should provide the item or items to which the qualification relates, the reasons for the qualification, and the amounts for such items, if disclosed by the entity, that are included in the stated reserve amount. A qualified SAO normally will state whether the stated reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, except for the item, or items, to which the qualification relates.

FAQ: How would an opining actuary treat a situation in which there is a portion of reserves for which he or she did not perform an independent analysis? Does this necessarily mean that the opinion is qualified?

A: Often, the phrase "independent analysis" is construed as a quantitative analysis. In addressing this question, it is important to distinguish between "quantitative analysis" and "review." In the course of a review of reserves, actuaries generally use quantitative methods to analyze most reserve segments. However, for certain segments the actuary may, relying on professional judgment, conclude that the reserves for the segment are likely to be too small to be material to the total, – and a quantitative analysis is not needed. This professional judgment would typically reflect information such as the number of open claims, dollars of total case loss reserves, and types of policies written. The use of such professional judgment does not necessarily require a qualified opinion. We note that the actuary's review process should be well-documented in the Actuarial Report.

Actuaries typically are careful to avoid language that may imply the SAO is qualified when in fact it is not. There are a number of situations in which the Appointed Actuary might issue an unqualified opinion even though the actuary did not review all of the reserves. Examples of these situations are as follows:

1. The Appointed Actuary reviews information regarding a portion of the company's business, concludes based on professional judgment that loss reserves for this portion are likely to be

[50] Section 3.11(d) of ASOP No. 36.

immaterial to the overall reserves, and decides not to perform a quantitative analysis of that business. The actuary may or may not disclose this in the opinion. The actuary may wish to address this professional judgment in the report supporting the opinion. In this instance, because loss reserves for that business are deemed immaterial, there is no apparent need to qualify the opinion.

2. The Appointed Actuary reviews a quantitative analysis performed by another regarding a material portion of the company's business, concludes based on professional judgment that the analysis for this portion produces reasonable results, and decides not to perform an independent quantitative analysis of that business. In this situation, according to paragraph 4.2.f of ASOP No. 36, the actuary should disclose (a) whether he/she reviewed the other's underlying analysis and (b) if a review was performed, the extent of the review. In this instance, there is no need to qualify the opinion. Refer to section 4.10 for further details on making use of the work of another.

Note:

- ASOP No. 36, section 4.2.d, requires disclosure of the item(s) to which the qualification(s) relate(s), the reason(s) for the qualification(s), and the amounts of such item(s), if disclosed by the reporting entity, that are included in the reserve. The 2014 NAIC SAO Instructions were revised to include this requirement as well. Further, ASOP No. 36 states that, if the amounts for such items are not disclosed by the entity, the Appointed Actuary should disclose that the reserve includes unknown amounts for such items.
- A qualified SAO does not carry a negative connotation; it merely identifies a component of reserves not covered by the SAO.
- The company's regulator is likely to follow up with the company to understand the qualification and how the company is satisfied with the adequacy of the reserves related to it.

4.5.2 Illustrative language

The following language may be appropriate:

In my opinion, ***with the qualification that it does not include the [identify the item(s) to which the qualification(s) relate(s)],*** *the amounts carried in Exhibit A on account of the items identified:*

A. Meet the requirements of the insurance laws of (state of domicile).
B. Are consistent with reserves computed in accordance with accepted actuarial standards.
C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements.

The Company's management has informed me that the reserves listed in Exhibit A include $X (x.x%) on a net of reinsurance basis, and $Y (y.y%) on a direct and assumed basis, for [item(s) to which the qualification(s) relate(s)]. I did not include in my review an evaluation of the reserves related to [item(s) to which the qualification(s) relate(s)] because there was not sufficient information available for me to assess the reasonableness of those reserves. Thus, this is a qualified statement of actuarial opinion.

4.6 No opinion

The NAIC SAO Instructions explain the determination of "no opinion" as follows:

> *"The Appointed Actuary's ability to give an opinion is dependent upon data, analyses, assumptions, and related information that are sufficient to support a conclusion. If the Appointed Actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the Appointed Actuary may issue a statement of no opinion. A statement of no opinion should include a description of the reasons why no opinion could be given."*[51]

ASOP No. 36, Section 3.11(e) states: *"A statement of no opinion should include a description of the reasons no opinion could be given."*

[51] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

4.6.1 Discussion

In situations in which there is a lack of historical data (e.g., new companies, change in book of business for mature companies, or general lack of data), the Appointed Actuary may find it useful to consider the following:

- Whether there exists adequate data to evaluate the reserves;
- If industry data or another company's data were used, whether there is reason to believe that these data are likely to be reasonably similar to the data patterns of the company for which the Appointed Actuary is rendering an SAO;
- Whether to provide disclosures concerning the data used; and
- Whether to provide disclosures concerning the resulting variability and uncertainty.

4.6.2 Illustrative language

The following language may be appropriate:

The ABC Insurance Co. commenced operations in 20XX. Therefore, the Company has only been in business for Y years and, as a result, does not, in my opinion, have sufficient historical experience upon which to base a reliable actuarial estimate of the loss and loss adjustment expense reserves as of Dec. 31, 20XX. I am not aware of appropriate external data upon which to base an estimate.

4.7 Other Loss Reserve items

The opinion statement in 5(D) of the NAIC SAO Instructions is usually appropriate for the situation in which the Scope includes material Other Loss Reserve items on which the Appointed Actuary is expressing an opinion. These items would be listed separately in Exhibit A, item 6.

4.7.1 Definitions

Other Loss Reserve items may include a specific loss reserve item for which an opinion is required by state regulation. Based on discussion of COPLFR members with AOWG, we understand that some regulators have seen the following included in item 6 of Exhibit A:

- The accrual for Death, Disability, or Retirement provisions in claims-made insurance policies if recorded as a loss reserve rather than Unearned Premium Reserve (UPR);

- The amount of discount for workers' compensation loss reserves;
- Retroactive reinsurance ceded loss reserves; and
- Contingent liabilities

4.7.2 Discussion

Whether Other Loss Reserve items are included within the scope of the SAO depends on materiality. According to the NAIC SAO Instructions,

> *If the Scope includes material Unearned Premium Reserves for P&C Long Duration Contracts or Other Loss Reserve items on which the Appointed Actuary is expressing an Opinion, the Opinion should contain language such as the following:*
>
> *D. "Make a reasonable provision for the unearned premium reserves for P&C Long Duration contracts and/or <insert Other Loss Reserve item on which the Appointed Actuary is expressing an Opinion> of the Company under the terms of its contracts and agreements."*[52]

If there is any aggregation or combination of items in Exhibit A, NAIC SAO Instructions require the OPINION paragraph to clearly identify the combined items.

4.7.3 Illustrative language

If the SCOPE includes Other Loss Reserve items as a write-in item in the Exhibit A, SCOPE, line 6, the Appointed Actuary may find it appropriate to add a statement in the OPINION paragraph, item "D" (or "E," if appropriate), such as:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

D. (or E.) Make a reasonable provision for the <insert Other Loss Reserve item(s) on which the Appointed Actuary is expressing an Opinion> of the Company under the terms of its contracts and agreements.

[52] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

4.8 UPR for P&C Long Duration Contracts

The amounts recorded by the company for unearned premium reserves for P&C Long Duration Contracts are identified in Exhibit A: SCOPE, items 7 and 8 on direct plus assumed and net bases, respectively. If the company has material amounts for these reserves, then the Actuary should opine on the reasonableness of the balances per the NAIC SAO Instructions. Note that these requirements are specific to P&C Long Duration Contracts. Further disclosures specific to A&H Long Duration Contracts that are identified in Exhibit B item 13 are included in the Relevant Comments as discussed in section 5.3.6, *Accident and Health Long Duration Contracts*.

As discussed in section 4.7, *Other Loss Reserve items*, the opinion statement in 5(D) is usually appropriate when the Appointed Actuary is opining on unearned premium reserves for extended losses and expenses or Other Loss Reserve items, as separately identified in Exhibit A: SCOPE.

4.8.1 Definitions

P&C Long Duration Contracts for the purposes of the SAO are defined in the NAIC SAO Instructions as:

> *"…contracts (excluding financial guaranty contracts, mortgage guaranty contracts and surety contracts) that fulfill both of the following conditions: (1) the contract term is greater than or equal to thirteen months; and (2) the insurer can neither cancel the contract nor increase the premium during the contract term. These contracts are subject to the three tests of SSAP No. 65-Property and Casualty Contracts of the NAIC Accounting Practices and Procedures Manual"*[53]

4.8.2 Discussion

Unearned premium reserves related to direct and assumed P&C Long Duration contracts are covered by the section 4 and Exhibit A: SCOPE (items 7 and 8) requirements of the NAIC SAO Instructions. The following specific contract types are excluded: financial guaranty, mortgage guaranty, and surety. While the primary focus of SCOPE items 7 and 8 is extended warranty contracts, companies may write other contracts with durations greater than 13 months that the insurer can neither cancel nor increase the premium during the contract term, such as residual value contracts or certain directors' and officers' liability insurance. These may fall within the SCOPE of this section of the NAIC SAO Instructions.

[53] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

SSAP 65 establishes methodology for determining a minimum level of unearned premium reserves for single or fixed premium policies with coverage periods of 13 months or greater. The accounting rule is found in the NAIC *Accounting Practices and Procedures Manual* and is reprinted in the Academy's 2021 P/C Loss Reserve Law Manual.

Further discussion of this topic can be found in Appendix III.1.

Section 4 and Exhibit A: SCOPE (items 7 and 8) of the NAIC SAO Instructions require disclosure of the unearned premium reserve amounts for P&C Long Duration Contracts within the scope of the opinion. The following entries are required to be included on Exhibit A: SCOPE:

Premium Reserves:

(7) Reserve for Direct and Assumed Unearned Premium for P&C Long Duration Contracts

(8) Reserve for Net Unearned Premium for P&C Long Duration Contracts

If there is any aggregation or combination of items in Exhibit A, NAIC SAO Instructions require the OPINION paragraph to clearly identify the combined items.

FAQ: Are all policies of duration not less than 13 months considered P&C Long Duration for the purposes of this requirement?

A: No. SSAP 65 specifies certain criteria for the policies that are subject to this requirement. Surety policies are explicitly excluded from this requirement. Policies that are cancellable under certain conditions may also be exempted, such as a D&O policy that can be cancelled upon a major change in the insured (such as a major acquisition).

Note:

- For SAOs that cover the contracts described in this section, the Appointed Actuary may choose to edit language throughout the SAO to keep it consistent with the fact that loss, LAE, and unearned premium reserves are included. Some of the places in a SAO where an Appointed Actuary typically uses the phrase "loss and loss adjustment expense" to refer to what is covered in the SAO are in the IDENTIFICATION paragraph, the SCOPE paragraph, the OPINION paragraph, the description of reconciliation issues, and the RELEVANT COMMENTS section. The Appointed Actuary could choose to refer throughout the SAO to the unearned premium reserves by some description such as "the unearned premium reserves related to single or fixed premium policies with coverage periods of 13 months or greater which are non-cancellable and not subject to premium increase (excluding financial guaranty contracts, mortgage guaranty contracts, and surety contracts)" or may define it once along with an abbreviation such as "P&C long duration unearned premium reserves".
- Exhibit A, items 7 and 8 require disclosure of the amount of the reserve for unearned premium for P&C Long Duration Contracts, and the NAIC SAO Instructions further require the Appointed Actuary to include a paragraph (D) regarding the reasonableness of the unearned premium reserve in the OPINION paragraph when these reserves are material. However, regulators have

noted that some SAOs include paragraph (D) regardless of materiality. The AOWG expects that actuaries either add paragraph (D) if they can and are indeed expressing an opinion on the reasonableness of this reserve and/or add an explanatory paragraph about these unearned premium reserves in RELEVANT COMMENTS and state whether the amounts are material or immaterial.

4.8.3 Illustrative language

If the SCOPE of the SAO includes material unearned premium reserves for P&C Long Duration Contracts, the NAIC SAO Instructions state that, the SAO "should contain language such as the following" as item (D) of the OPINION paragraph of the SAO:

Make a reasonable provision for the unearned premium reserves for P&C Long Duration Contracts of the Company under the terms of its contracts and agreements.

4.9 Other Premium Reserve items

If the company has Other Premium Reserve items which the Appointed Actuary has listed separately in Exhibit A, item 9, and are included within the scope of the opinion, then the Actuary should conclude on the reasonableness of these balances if they are material.

4.9.1 Definitions

Other Premium Reserve items may include a specific premium reserve item for which an Opinion is required by state regulation, or the accrual for Death, Disability, or Retirement (DDR) provisions if recorded as an unearned premium reserve.

There is further discussion on disclosures for DDR provisions in the RELEVANT COMMENTS section of this practice note (section 5.3.5).

4.9.2 Discussion

If there is any aggregation or combination of items in Exhibit A, NAIC SAO Instructions require the opinion language to clearly identify the combined items.

4.9.3 Illustrative language

If the SCOPE includes Other Premium Reserve items as a write-in item in the Exhibit A, SCOPE, line 9, the actuary may wish to add an additional statement in the OPINION paragraph, item "D" (or "E," if appropriate), such as:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

D. (or E.) Make a reasonable provision for the unearned premium reserves for <insert other premium reserve item(s) on which the Appointed Actuary is expressing an Opinion> under the terms of its contracts and agreements.

Or using an unearned premium for DDR as an example, the actuary may wish to expand upon the OPINION paragraph, item "C", such as:

In my opinion, the amounts carried in Exhibit A on account of the items identified:

C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements, including amounts under yet to be issued extended reporting endorsements from the Company's death, disability, and retirement contract provision that the Company holds as part of its unearned premium reserve.

4.10 Use of the work of another

According to the NAIC SAO Instructions,

> *If the Appointed Actuary has made use of the analysis of another actuary not within the Appointed Actuary's control (such as for pools and associations, for a subsidiary or for special lines of business) for a material portion of the reserves, the other actuary must be identified by name, credential and affiliation within the OPINION paragraph. If the Appointed Actuary has made use of the work of a non-actuary (such as for modeling) for*

a material portion of the reserves, that individual must be identified by name and affiliation and a description of the type of analysis performed must be provided.[54]

4.10.1 Discussion

Section 5 of the NAIC SAO Instructions also requires that, if an actuary has used the work of another actuary for a material portion of the reserves, he or she must provide that other actuary's name, credentials and affiliation in the opinion. In 2016 the NAIC SAO Instructions were expanded to include the use of the work of a non-actuary, which is consistent with the phraseology in ASOP No. 36.[55]

ASOP No. 36 takes this disclosure requirement several steps further. ASOP No. 36 states that the actuary should make use of another's supporting analyses or opinions only when it is reasonable to do so. According to section 3.7.2 of ASOP No. 36, in determining whether it is reasonable to use the work of another, the Appointed Actuary should consider the following:

a. The amount of the reserves covered by another's analyses or opinions in comparison to the total reserves subject to the actuary's opinion;
b. The nature of the exposures and coverage;
c. The way in which reasonably likely variations in estimates covered by another's analyses or opinions may affect the actuary's opinion on the total reserves subject to the actuary's opinion; and
d. The credentials of the individual(s) that prepared the analyses or opinions.

In situations where the work was done by someone not under the actuary's control, and after considering these items, the actuary determines that it is reasonable to use the work of another without performing any independent analysis, and the actuary uses another's work for a material portion of the reserves, the actuary should disclose (a) whether he/she reviewed the other's analysis and (b) if a review was performed, the extent of the review (see paragraph 4.2.f). Where, in the opinion of the actuary, the analyses or opinions of another need to be modified or expanded, the actuary should perform such analyses as necessary to issue the opinion on the total reserves. Please refer to ASOP No. 36 for additional requirements in this area. If the actuary is unable to determine that it is reasonable to use the work of another, it may be necessary to issue a qualified opinion. Refer to section 4.5 for further details on qualified opinions.

The actuary may consider consulting ASOP No. 56 when making use of models developed by others.

[54] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[55] ASOP No. 36 refers to making use of "another's" work. According to section 3.7 of ASOP No. 36, "The actuary may develop estimates of the unpaid claims for all or a portion of the reserve or make use of another's unpaid claims estimate analysis or opinion for all or a portion of the reserve. For purposes of this section, 'another' refers to one not within the actuary's control."

4.10.2 Illustrative language

If the work of another was used, whether an actuary or not, (such as for pools and associations, for a subsidiary, or for special lines of business) for a material portion of the reserves, the other person must be identified by name and affiliation within the OPINION paragraph. The following provides sample wording that could be included in the OPINION section in the situation where the Appointed Actuary makes use of the work of the actuary for an underwriting pool that the company participates in:

The Company participates in the [name of underwriting pool] ("the Pool"). In forming my opinion, I made use of the analysis and opinion issued by Mr. Joe Actuary, MAAA, FCAS, Chief Actuary for the Pool, regarding reserves held by the Company for the Pool.

This wording would follow items A. through E. of the OPINION.

5. RELEVANT COMMENTS section

This, the RELEVANT COMMENTS chapter, is the last of four chapters (i.e., Chapter 2 through Chapter 5) in this practice note that discuss each of the four required sections of the Statement of Actuarial Opinion: IDENTIFICATION, SCOPE, OPINION, and RELEVANT COMMENTS (sections 3 through 6 of the NAIC SAO Instructions).

According to the NAIC SAO Instructions,

> *"The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address the following topics of regulatory importance.*
>
> *a. Company-Specific Risk Factors…*
> *b. Risk of Material Adverse Deviation….*
> *c. Other Disclosures in Exhibit B…*
> *d. Reinsurance…*
> *e. IRIS Ratios…*
> *f. Methods and Assumptions…"*[56]

In addition, the NAIC SAO Instructions state the comments should describe the significance of the Other Disclosures in Exhibit B:

> *"RELEVANT COMMENT* paragraphs should describe the significance of each of the remaining Disclosure items (8 through 14) in Exhibit B. The Appointed Actuary should address the items individually and in combination when commenting on a material impact."[57]

The 2021 AOWG Regulatory Guidance further states:

> *In addition to the required Relevant Comments, the Appointed Actuary should consider providing information on other material items such as reinsurance with affiliates, mergers or acquisitions, other premium reserves, and catastrophe risk.*

In addition to the disclosures on Exhibit B, the Appointed Actuary must follow the disclosure requirements of sections 4.1 and 4.2 of ASOP No. 36, which include the following, among others:

- The intended user(s) of the SAO
- The intended purpose of the SAO

[56] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[57] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

- The stated basis of reserve presentation
- Whether any material assumption or method was prescribed by applicable law
- Whether the Appointed Actuary disclaims responsibility for any material assumption or method selected by another party

The following sections discuss each of the required RELEVANT COMMENT paragraphs per the NAIC SAO Instructions in further detail.

5.1 Company Specific Risk Factors

According to the NAIC SAO Instructions:

> *"The Appointed Actuary should include an explanatory paragraph to describe the major factors, combination of factors or particular conditions underlying the risks and uncertainties the Appointed Actuary considers relevant. The explanatory paragraph should not include general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the Appointed Actuary required to include an exhaustive list of all potential sources of risks and uncertainties."*[58]

In this section we will discuss required commentary on major factors or particular conditions underlying the significant risks or uncertainties that the Appointed Actuary considers relevant to the statutory entity.

5.1.1 Discussion

The 2021 NAIC SAO Instructions require the Appointed Actuary to comment on company specific risk factors even when no risk of material adverse deviation is judged to exist. COPLFR has prepared a list of possible risk factors; these are not meant to be all-inclusive and certainly are not meant to apply to every company. For example, one would not expect to see discussion of the risk of A&E losses for a personal lines company. The list below is meant to provide some suggestions for the types of risk factors and underlying loss exposures for which comment may be appropriate:

- COVID-19 (see Section 5.7)
- A&E losses
- Other emerging mass torts
- Construction defects
- Catastrophic weather events
- Conflagration events
- Exposure related to mortgage defaults
- Exposure to cyber liability

[58] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

- High excess layers
- Impact of soft market conditions
- Large deductible workers' compensation claims
- Medical professional liability legislative issues
- New products or new markets
- Opioid epidemic
- Rapid growth in one or more lines of business or segments
- Lack of data or unexpected and unexplained changes in data
- Operational changes that are not objectively quantified
- Sudden unexplained changes in frequency or severity of reported data for a line of business or segment
- Changes in adequacy of known case reserves
- Changes in distribution of policy limits and/or policy attachments/deductibles
- Terms and conditions of reinsurance contracts

The NAIC SAO Instructions direct the Appointed Actuary to address "the major factors, combination of factors or particular conditions underlying the risks and uncertainties the Appointed Actuary considers relevant." The list below is meant to provide some suggestions for the types of combinations of risk factors and conditions about which comment may be appropriate:

- Rapid growth during a soft market in a line of business in which the company has limited historical experience
- Risk of adverse medical inflation on a large book of excess workers' compensation business
- Risk of increased sustained unemployment, along with reductions in home prices on a mortgage insurance book of business
- Significant shifts upward in policy limits and attachment points sold, along with a reduction in reinsurance protection purchased

Note:

- The Appointed Actuary may refer to section 4.2.e of ASOP No. 36, which pertains to Significant Risks and Uncertainties, for further guidance about the explanatory paragraph.

5.1.2 Illustrative language

The following language may be appropriate. Note that the 2021 AOWG Regulatory Guidance requires this section of the SAO to go beyond the mention of general risk factors, such as the first three sentences of the following illustrative language. Including only these first three sentences would not satisfy the regulatory requirement around risk factors; subsequent sentences would be necessary:

Actuarial estimates of property and casualty loss and loss adjustment expense reserves are inherently uncertain because they are dependent on future contingent events. Also, these reserve estimates are generally derived from analyses of historical data, and future events or conditions may differ from the past. The actual amount necessary to settle the unpaid claims may therefore be significantly different from the reserve amounts listed in Exhibit A.

The following provides major factors and/or particular conditions underlying the risks and uncertainties that I consider relevant to the Company's estimates of unpaid losses and loss adjustment expenses at December 31, 2021:

1. *<Description of Item 1>_____*
2. *<Description of Item 2> _____*
3. *<Description of Item 3> _____*

5.2 Risk of Material Adverse Deviation and the Materiality Standard

The NAIC SAO Instructions require the Appointed Actuary to include RELEVANT COMMENT paragraphs that specifically address material adverse deviation. These paragraphs would contain the following:

- A description of the major factors or particular conditions underlying the significant risks or uncertainties that the Appointed Actuary considers relevant to the statutory entity;
- The amount of adverse deviation in U.S. dollars that the Appointed Actuary judges to be material with respect to the SAO (i.e., materiality standard disclosed as item 5 in Exhibit B) and an explanation of how that amount was determined; and
- An explicit statement of whether the Appointed Actuary reasonably believes that there are significant risks or uncertainties that could result in material adverse deviation. This determination is also disclosed in item 6 of Exhibit B.

In this section we discuss the materiality standard and address the determination of Risk of Material Adverse Deviation.

5.2.1 Definitions

Materiality: The Appointed Actuary may refer to section 3.6 of ASOP No. 36, which pertains to materiality.

5.2.2 Discussion

According to the NAIC SAO Instructions,

> *"The Appointed Actuary must identify the materiality standard and the basis for establishing this standard. The materiality standard must also be disclosed in U.S. dollars in Exhibit B: Disclosures."*[59]

Examples of possible considerations in the choice of a materiality standard are:

- Percentage of surplus
- Percentage of reserves
- The amount of adverse deviation that would cause surplus to fall below minimum capital requirements
- The amount of adverse deviation that would cause Risk-Based Capital (RBC) to fall to the next action level
- Multiples of net retained risk
- Reinsurance considerations, such as levels of ceded reserves compared to surplus or concerns about solvency or collectability of reinsurance
- The upper limit of a company's reinsurance protection on reserve development, if any

Other bases for establishing the standard may be appropriate as well.

FAQ: If a company is a 0% pool participant, what is the company's materiality standard?

A: According to the NAIC Instructions, a 0% pool participant should enter a materiality standard of zero dollars for Question 5 on Exhibit B of the SAO. Furthermore, the response to Question 6 of Exhibit B regarding whether there are significant risks that could result in material adverse deviation should be "not applicable".

The NAIC Financial Analysis Handbook provides a Bright Line Indicator Test in regard to the Risk of Material Adverse Deviation for those companies subject to RBC reporting requirements. If the Appointed Actuary does not address material adverse deviation, yet ten percent (10%) of the company's net loss reserves is greater than the difference between the Total Adjusted Capital and the company Action Level capital, then comments from the Appointed Actuary should be pursued by the Financial Analyst. In situations where the test is triggered, the Appointed Actuary may consider disclosing why he/she does not feel there is a RMAD, if that is the conclusion. The Appointed Actuary may also wish to consider this test in the selection of the materiality standard.

FAQ: What percentage of SAOs concludes an RMAD exists?

A: Approximately one-third of SAOs reach this conclusion.

[59] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

The Five Year Historical Data Exhibit of the Annual Statement is a convenient source for these RBC values. Total Adjusted Capital and Authorized Control Level Risk Based Capital are shown on this Annual Statement exhibit:

Company Action Level Capital = 2 * Authorized Control Level Risk Based Capital

In addition, the 2021 AOWG Regulatory Guidance includes the following:

> *"When deciding whether RMAD exists, the Appointed Actuary should consider the materiality standard in relation to the range of reasonable estimates and the carried reserves. For example, RMAD should likely exist when the sum of the materiality standard plus the carried reserves is within the range of reasonable estimates. Regardless, the Appointed Actuary should support the conclusion of whether RMAD exists."*[60]

We reiterate that while RMAD may not exist under the aforementioned quantitative consideration, there still may be risks and uncertainties that could result in material adverse deviation. Therefore, both quantitative and qualitative considerations might be contemplated in determining whether there are significant risks that could result in material adverse deviation.

The Appointed Actuary may find it appropriate to consider including a discussion of steps the company has taken to mitigate the risk factors discussed in the explanatory paragraph.

While typical practice and the input on Exhibit B of the Opinion base the materiality standard and decision of a risk of material deviation on net reserves, the 2021 AOWG Regulatory Guidance includes the following:

> "the materiality standard in Exhibit B, Item 5 and the RMAD conclusion in Exhibit B, Item 6 should pertain to the net reserves. If the Appointed Actuary reaches a different conclusion on the risk of material adverse deviation in the net versus the direct and assumed reserves, the Appointed Actuary should include a Relevant Comments paragraph to address the differences. Regulators understand that a net versus a direct and assumed RMAD will have different meanings and, potentially, different materiality standards."[61]

The Appointed Actuary may consider a materiality standard for direct and assumed reserves that focuses more on the total amount of these reserves rather than on standards that are based on policyholder's surplus or RBC.

Potential considerations of an RMAD decision on a direct and assumed basis versus a net basis may be the carried reserve in relation to the actuary's range or varying magnitude of reinsurance protection

[60] 2021 AOWG Regulatory Guidance (Appendix II).
[61] 2021 AOWG Regulatory Guidance (Appendix II).

across the company's portfolio (e.g., the company maintains additional reinsurance protection on lines of business that have greater uncertainty in results).

Note:

- No matter how the materiality standard is determined, ASOP No. 36, section 3.2 requires the Appointed Actuary to consider the purpose and intended uses for which the Appointed Actuary prepares the SAO.

5.2.3 Illustrative language

The following provide examples of language that could be appropriate; note however that there are additional possibilities for the choice of the materiality standard (examples of which are provided above):

My Materiality Standard for purposes of addressing the risk of material adverse deviation of the Company's reserves for unpaid losses and loss adjustment expenses has been established as xx% of the Company's net loss and LAE reserves, or $X million.

OR

My Materiality Standard for purposes of addressing the risk of material adverse deviation of the Company's reserves for unpaid losses and loss adjustment expenses has been established as yy% of the Company's policyholders surplus, or $Y million.

OR

My Materiality Standard for purposes of addressing the risk of material adverse deviation of the Company's reserves for unpaid losses and loss adjustment expenses has been established as $Y million. This represents the reduction in surplus that would result in additional action based on the NAIC RBC formula. A reduction in surplus of $Y would result in the Company moving into the [state which RBC level, e.g., Company] Action Level.

Because of the nature of the NAIC's request regarding discussion of the risk of material adverse deviation, each individual situation will call for its own wording. However, the following provides illustrative wording that might be appropriate in a situation where there is a RMAD:

I believe there are significant risks and uncertainties associated with the Company's net loss and loss adjustment expense reserves that could result in material adverse deviation. I have identified those risk factors as _____, _____, and _____. These risk factors are described in greater detail in the preceding paragraph and in the report supporting this opinion. The absence of other risk factors from this commentary is not meant to imply that additional factors cannot be identified in the future as having had a significant influence on the Company's reserves.

There may be situations where mitigating factors reduce or eliminate the risk of material adverse deviation. An example of illustrative language for a situation where retroactive reinsurance is a mitigating factor is as follows:

It should be noted, however, that the company has entered into a retroactive reinsurance contract which would serve to mitigate the impact of adverse deviation in loss and LAE reserves on the company's statutory surplus if recoverables from that contract were considered as a reduction in net loss and LAE reserves.

Relevant comments on retroactive reinsurance are discussed in section 5.4 below.

The following provides illustrative wording in a situation where there is no RMAD:

In my analysis I considered [the aforementioned risk factors and] the implications of uncertainty in estimates of unpaid losses and loss adjustment expenses in determining a range of reasonable unpaid claim estimates. I have also observed that the difference between the high end of my range of reasonable unpaid claim estimate and the Company's carried reserve for losses and loss adjustment expense is less than my materiality standard. I further considered whether there are significant risks and uncertainties that could result in material adverse deviation. In light of the materiality considerations within this analysis, and after considering the potential risks and uncertainties that could bear on the Company's reserve development, I concluded that those risks and uncertainties would not reasonably be expected to result in material adverse deviation in the Company's carried reserves for unpaid losses and loss adjustment expenses.

5.3 Other Disclosures in Exhibit B

Paragraph 6.C. of the NAIC SAO Instructions requires commentary on the significance of each of the remaining disclosures in Exhibit B, i.e., items 8 through 14. These are described in the subsections of 5.3 below.

5.3.1 Anticipated salvage and subrogation

In item 8 of Exhibit B, the Appointed Actuary is required to disclose the amount of anticipated net salvage and subrogation included as a reduction to loss reserves as reported in Schedule P. This section provides discussion and illustrative wording around this disclosure item.

5.3.1.a Discussion

SAOs are expected to be prepared on the same basis with regard to anticipated salvage and subrogation as the disclosed basis for the carried loss reserves.

ASOP 36 states that the Appointed Actuary should state whether reserves are gross or net of specified recoverable, including salvage and subrogation. The amount of anticipated salvage and subrogation, if any, is disclosed in Schedule P, Part 1.

The Appointed Actuary is reminded that states' regulations may differ in the required treatment of anticipated salvage and subrogation recoveries.

Note:

- The amount of anticipated salvage and subrogation reported in item 8 of Exhibit B should reconcile to Schedule P, Part 1, column 23. Column 23 is a memorandum column (i.e., it is not used to calculate other columns).
- During August 2021, the Statutory Accounting Principles (E) Working Group of the NAIC recommended nonsubstantive revisions to *SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses* to clarify that salvage and subrogation estimates and recoveries can include amounts related to both claims losses *and loss adjusting expenses*. [SAPWG 2021-13]

The Appointed Actuary might find it appropriate to choose to use wording similar to the following:

The Company's reserves listed in Exhibit A are established net of anticipated salvage and subrogation. Anticipated salvage and subrogation disclosed in item 8 of Exhibit B is X% of the Company's policyholders surplus.

OR

The Company's reserves listed in Exhibit A are established gross of anticipated salvage and subrogation.

OR

The Company does not explicitly provide for anticipated salvage and subrogation, although cedant data, and ultimate liabilities derived from that data, include an implicit provision for anticipated salvage and subrogation.

5.3.2 Discounting

In item 9 of Exhibit B, the Appointed Actuary is required to disclose the amount of non-tabular (item 9.1) and tabular (item 9.2) discount included as a reduction to loss reserves as reported in Schedule P. This section provides discussion and illustrative wording around this disclosure item.

5.3.2.a Definition

According to SSAP 65, paragraph 11, tabular reserves are indemnity reserves that are calculated using discounts determined with reference to actuarial tables which incorporate interest and contingencies such as mortality, remarriage, inflation, or recovery from disability applied to a reasonably determinable payment stream. Tabular reserves shall not include medical loss reserves or LAE reserves.

5.3.2.b Discussion

SAOs are expected to be prepared on the same basis with regard to discounting as the disclosed basis for the carried loss reserves.

The amount of discount is required by the NAIC SAO Instructions to be disclosed separately for tabular and non-tabular reserves. The amount of non-tabular discount, if any, is disclosed in Schedule P, Part 1. Both tabular and non-tabular amounts are disclosed in Annual Statement Note 32.

If the Appointed Actuary is providing an SAO for discounted loss reserves, the Appointed Actuary can find guidance in ASOP No. 36 and ASOP No. 20, *Discounting of Property/Casualty Unpaid Claim Estimates*. The insurance laws of the state of domicile will provide information on whether discounting is allowed.

Further, inquiry can be made about whether the state insurance regulator has allowed the company to discount reserves by authorizing a permitted practice. In addition to information provided directly to the Appointed Actuary, discussion on a company's discounting procedures and Permitted Practices may be found in Annual Statement Note 1.

Note:

- If discounting causes a reconciling difference between the reserves listed in Exhibit A and the AOS, an explanation of this difference should be disclosed in the AOS. Exhibit A, item 4 is comprised of Schedule P Part 1, columns 17, 19, and 21 which are gross of non-tabular discounting. If the direct and assumed reserves in the AOS are net of discounting, this may create a reconciling difference.
- Schedule P, Part 2 is gross of all discounting, including tabular discounts.

In a typical situation, the Appointed Actuary might find it appropriate to choose to use wording similar to the following:

The Company discounts its liabilities for certain workers' compensation claims and certain other liability claims related to annuity obligations from Structured Settlements at a before/after income tax rate of Z.Z%. Note 32 contains details for the amounts disclosed in item 9. The amount of discount is X% of the Company's net loss and LAE reserves and Y% of the Company's policyholders surplus.

OR

The Company does not discount its reserves listed in Exhibit A for the time value of money.

There are various other situations where, if there is a material impact, the Appointed Actuary may wish to consider further discussion on the amount of discount in the Opinion. For example, if the Appointed Actuary believes the amount of discount is either excessive or too low, and that amount of redundancy or deficiency causes the actuary to change the type of Opinion from reasonable to not reasonable, further discussion may be necessary. ASOP No. 36 includes the following:

> "4.2.g. If the statement of actuarial opinion relies on present values and if the actuary believes that such reliance is likely to have a material effect on the results of the actuary's reserve evaluation, the actuary should disclose that present values were used in forming the opinion, the interest rate(s) used by the actuary, and the monetary amount of discount that was reflected in the reserve amount."

Extended comments may be appropriate in the actuarial report depending on guidance in ASOP No. 20 or ASOP No. 41. In these and other possible scenarios the Appointed Actuary may wish to describe the issue in the actuarial report, as well as the impact of using what the actuary believes to be more reasonable assumptions or appropriate practices in the actuarial report.

5.3.3 Voluntary and/or involuntary underwriting pools and associations

In item 10 of Exhibit B, the Appointed Actuary is required to disclose the amount of "net reserves for losses and loss adjustment expenses for the company's share of voluntary and involuntary underwriting pools' and associations' unpaid losses and loss adjustment expenses that are included in reserves shown on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines". This section provides discussion and illustrative wording around this disclosure item. Note that NAIC Statutory Issue Paper 97 defines three categories of underwriting pools and associations, involuntary, voluntary, and intercompany. This section describes the treatment for involuntary and voluntary pools and associations. Further information regarding intercompany pools is included in section 3.3, Intercompany pooling.

FAQ: What if I didn't review another's work supporting the reserve balance for a voluntary or involuntary underwriting pool? Does this mean that my opinion should be qualified?

A: No, not if the pool reserves are immaterial. Section 4.10 provides further details on making use of the work of another.

5.3.3.a Discussion

Some key considerations for the SAO for a company that participates in voluntary and/or involuntary underwriting pools and associations are:

- Are pool reserves material?
- Does the Company book what the pool reports with no independent analysis, perform independent actuarial analysis and in some instances adjust the pool's reported reserves, make use of the pool Appointed Actuary's SAO, or some combination of the above?
- If there is a lag in the booking of pool losses, does the company accrue for this or not? Are premiums treated similarly? Are these items material?
- How does the company's ceded reinsurance program treat business that comes in from these pools?

The Appointed Actuary is reminded that unless the SAO is qualified, the Appointed Actuary is responsible for opining on the reasonableness of the reserves in aggregate. This may include consideration and clearly stating his/her level of review of and use of others' SAOs for any material reserves related to pools, and/or explaining their immateriality.

Appendix III.3 contains further guidance, including commentary from the CASTF regarding SAOs for pools and associations.

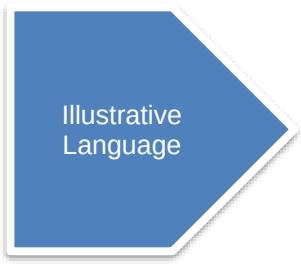
Note:

- The amount disclosed in item 10 of Exhibit B represents the reserve for the company's net participation in the voluntary or involuntary pool(s), net of reinsurance purchased by the pool.

5.3.3.b Illustrative language

The Appointed Actuary might find it appropriate to use wording similar to the following:

Situation1: Material reserves; adjustment for booking lag



The Company participates in a number of voluntary and involuntary pooling arrangements. The booked reserves and earned premiums for some pools reflect losses incurred and premiums earned by the pools through various dates prior to year-end. Company practice is to record the loss and loss adjustment expense reserves reported to it by the pools with accrual for any reporting lag.

Situation 2: Material reserves; independent review of significant pools or use of pool SAO; balance of non-reviewed reserves immaterial; adjustment for lag

The Company participates in a number of voluntary and involuntary pooling arrangements. Company practice is to review the reserves for the larger pools, which account for $ABC of pool reserves, independently. Based on this review, the Company has increased the reserves reported by these pools by ___ percent. The Company has made use of actuarial opinions prepared by (insert name and affiliation of opining actuary) for other pools, which account for $DEF of pool reserves. I have reviewed the analysis underlying these actuarial opinions and have concluded that the analysis is reasonable. I have not performed an independent analysis for these pools. The remaining non-reviewed pool reserve ($JKL) is immaterial. Aggregate reserves held for all pools are $XYZ. Company practice is to accrue for the reporting lag for these pools.

As a reminder, when the Appointed Actuary makes use of the work of another for a material portion of reserves, this needs to be disclosed in the OPINION paragraph.

Situation 3: Immaterial pool exposure

Illustrative Language

The Company participates in a small number of voluntary and involuntary pools. Company practice is to record the loss and loss adjustment expense reserves reported to it by the pools without adjusting for a reporting lag. Reserve exposure with respect to pools is considered immaterial.

5.3.4 A&E liabilities

In item 11 of Exhibit B, the Appointed Actuary is required to disclose the amount of net reserves for losses and LAE that the company carries for asbestos (item 11.1) and environmental (item 11.2) liabilities included on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines.

This section provides discussion and illustrative wording around this particular disclosure item.

Note this section addresses only the required discussion of A&E liabilities and no other possible mass tort exposures. However, while not directly applicable, the ideas presented within this Section 5.3.4 may also be useful for disclosure of other possible mass torts when relevant to the disclosure of major risk factors.

5.3.4.a Definitions

Asbestos exposures – *"any loss or potential loss (including both first party and third party claims) related directly or indirectly to the manufacture, distribution, installation, use, and abatement of asbestos-containing material, excluding policies specifically written to cover these exposures."*[62]

Environmental exposures – *"any loss or potential loss, including third party claims, related directly or indirectly to the remediation of a site arising from past operations or waste disposal. Examples of environmental exposures include but are not limited to chemical waste, hazardous waste treatment, storage and disposal facilities, industrial waste disposal facilities, landfills, superfund sites, toxic waste pits, and underground storage tanks."*[63]

FAQ: Do all asbestos & environmental (A&E) claim liabilities of an insurer get reported in the A&E Note in the statutory Annual Statement?

A: Not necessarily. The statutory Note does not include liabilities from policies clearly designed to cover A&E, such as asbestos abatement policies and many claims-made pollution policies.

For the purposes of what is disclosed in Exhibit B, A&E exposures *"should exclude amounts related to contracts specifically written to cover asbestos and environmental exposures. Contracts specifically written to cover these exposures include Environmental Impairment Liability (post 1986), Asbestos Abatement, Pollution Legal Liability,*

[62] SSAP 65, paragraph 41 (Appendix IV).
[63] SSAP 65, paragraph 41 (Appendix IV).

Contractor's Pollution Liability, Consultant's Environmental Liability, and Pollution and Remediation Legal Liability."[64]

5.3.4.b Discussion

While mass torts in general have significant uncertainties associated with claim liability estimation, asbestos liabilities and the environmental liabilities associated with hazardous waste sites have been especially problematic. Over the years mass torts arising from these sources have resulted in material levels of adverse development for the industry, hence the special attention they have received in the SAO and in both statutory and GAAP disclosures.

Traditional actuarial methods (i.e., squaring triangles and other accident year development approaches) are typically not applied to the estimation of these liabilities. This is because such claims often attach multiple accident/policy years, and because new claim filings continue to arise for several decades after the policies were issued. Various methodologies have been developed over the years to address these situations, yet the resulting indications have historically still been subject to significant uncertainty and risk of adverse deviation.

In most cases, one of the following situations will present itself to the Appointed Actuary:

1. The company has not provided any coverage that could reasonably be expected to produce material levels of asbestos and/or environmental liability claims activity.

2. The company has provided coverage that can reasonably be expected to produce material levels of asbestos and/or environmental liability claims activity that may rise to the level of a RMAD or combined with other risks significantly contribute to the determination of a RMAD.

3. The company has provided coverage that can reasonably be expected to produce material levels of asbestos and/or environmental claims activity, but it is believed unlikely to rise to the level of a RMAD alone or in combination with other risks of the company.

Note that knowledge of any A&E claims (other than those immediately denied due to asbestos or environmental exclusions) may create such uncertainty regarding ultimate liability for this category that further investigation may be warranted. Such investigation may benefit from study of prior A&E disclosures in the statutory statement Notes, as well as required disclosure in SEC filings (10-K, 10-Q). (These GAAP disclosures are required where the A&E exposures are material for companies filing SEC statements. Note, however, that SEC filings are generally done only on a consolidated basis for groups, and not by legal entity, hence the SEC disclosure may pertain to companies within the group other than the one being opined upon.)

[64] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

Companies writing no commercial liability coverage, whether on a primary, excess, or assumed basis, may be candidates for the first situation above. Companies that have written commercial liability coverage in the past without sufficient exclusions would normally be candidates for the second and third situations.

The third situation could arise in a variety of situations, such as

- A predominately personal lines company that historically wrote only a small amount of commercial liability on a direct or assumed basis whereby there exists material but limited levels of exposure relative to the materiality criteria for a RMAD
- A company that has retroactive ceded reinsurance protection such that its gross exposure is sufficiently ceded and, on a net basis, is unlikely to rise to the level of a RMAD[65]
- A company that has already reserved up to policy limits on all such policies

In rare cases the Appointed Actuary might make a determination that these exposures were not reasonably estimable. This will usually result in a qualified SAO under ASOP No. 36 if the items are likely to be material. There is no requirement to issue a qualified opinion if the Appointed Actuary reasonably believes the items to be immaterial.

The Appointed Actuary may believe that a reasonable estimate of this liability can be made, but that the booked reserve for this liability is not reasonable, and this results in an inadequate *overall* reserve. The decision to issue a deficient/inadequate SAO is typically based upon *overall* reserve adequacy, not just reserve adequacy for this or any other isolated reserve segment. Note the company is required to disclose A&E reserves in the Notes to the Financial Statements.

The Appointed Actuary may want to comment on the following issues:

1. Whether there appears to be a material exposure
2. The aggregate dollar amount of reserves held for this exposure
3. Significant variability and uncertainties inherent in the estimate of these liabilities

FAQ: The Company whose reserves I'm opining on has bought a retroactive cover that assumes all asbestos losses. Do I still have to discuss A&E in my opinion?

A: Retroactive reinsurance accounting does not impact booked loss reserves on either a gross or net basis. But the benefit from such cover does show up in surplus. Hence you may still have to discuss the impact on a gross basis, and the impact on net reserves.

[65] Note that a contract accounted for as retroactive reinsurance will have no impact on the loss reserves reported in Schedule P, per SSAP 62R, paragraph 29 (Appendix IV). Instead, the reserves assumed or ceded for contracts under retroactive reinsurance accounting are reported in write-in lines of the Annual Statement. Surplus is impacted by such contracts, but not loss reserve schedules of the Annual Statement. For more discussion of this topic, see Section 5.8 and Appendix III.4.

Additionally, the Appointed Actuary may choose to comment on some of the following related items (assuming that the Appointed Actuary finds the liability to be material and reasonably estimable):

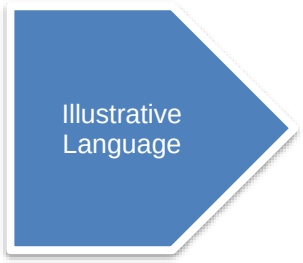
- The difficulties attendant in providing an actuarial estimate of these liabilities
- Whether these liabilities are being handled by a dedicated experienced claim/legal unit
- Any other factors the Appointed Actuary may have considered in forming his or her SAO

5.3.4.c Illustrative language

The following language may be appropriate:

The Appointed Actuary may consider using wording similar to the following:

Situation 1: No material A&E exposure



I have reviewed the Company's exposure to asbestos and environmental claims. In my opinion, the chance of material liability is remote, since reported claim activity levels are minimal [or, that there have been no claims reported in the Annual Statement A&E Note], and the Company has never written commercial liability coverages on a primary, excess, or assumed basis.

Situation 2: Material A&E exposure, possible or likely RMAD

I have reviewed the Company's exposure to asbestos and environmental claims, and I have concluded that this exposure is material. The Company currently holds $XYZ million of reserves for losses and loss adjustment expenses for asbestos and environmental claims. Estimation of liabilities for these claims is unusually difficult due to the extreme latency of claim activity, issues related to allocation of claim costs (including defense costs) across policy years and insurers, and the potential for coverage disputes with insureds and other insurers (regarding allocation of such costs). Therefore, any estimation of these liabilities is subject to significantly greater than normal variation and uncertainty.

An Appointed Actuary that uses language such as above may want to pay particular attention to A&E in the RMAD evaluation. If the Appointed Actuary in this circumstance concludes that the A&E uncertainty creates or significantly contributes to a RMAD, then the above language may be appropriate to include in

the discussion of risk factors and the RMAD, rather than in the RELEVANT COMMENTS section, including the following addition to the above illustration.

In my opinion, this uncertainty in asbestos and environmental claim liabilities rises to the level of a risk of material adverse deviation, given my materiality standard of $XXX.

If this is included in the RMAD section, then the RELEVANT COMMENTS section might include the following wording:

I have reviewed the Company's exposure to asbestos and environmental claims, and concluded that this exposure creates a significant risk of material adverse deviation. Please see the above RMAD discussion for more details.

Situation 3: Material exposure but RMAD unlikely due to a mitigating factor or relative size

I have reviewed the Company's exposure to asbestos and environmental claims, and I have concluded that this exposure is material. The Company currently holds $XYZ million of reserves for losses and loss adjustment expenses for asbestos and environmental claims. Estimation of liabilities for these claims is unusually difficult due to the extreme latency of claim activity, issues related to allocation of claim costs (including defence costs) across policy years and insurers, and the potential for coverage disputes with insured and other insurers (regarding allocation of such costs). Therefore, any estimation of these liabilities is subject to significantly greater than normal variation and uncertainty.

Although this uncertainty in asbestos and environmental claim liabilities rises to the level of a risk of material adverse deviation, given my material standard of $XXX, it should be noted that the Company has a retroactive reinsurance contract with {Name of Reinsurer}. This retroactive reinsurance agreement would limit the impact of any adverse deviation in loss and loss adjustment expense reserves on the Company's statutory surplus. Therefore, if considered on the basis of surplus impact and not reserve impact, then I do not believe that this asbestos and environmental risk could result in material adverse deviation.

Note that the first paragraph of Situation 3 is the same as the first paragraph in Situation 2, however the conclusion regarding RMAD differs.

The last paragraph of Situation 3 is for the situation where the RMAD is mitigated. The following is an illustrative paragraph that may be appropriate for the situation where RMAD is unlikely due to relative size:

Despite the uncertainty associated with asbestos and environmental claim liabilities, my opinion is that it is unlikely to rise to the level of a risk of material adverse deviation due to the limited number of policies with this exposure (and the potential loss on those policies) relative to my materiality standard of $XXX.

Note that where material A&E exposure exists for a company that files with the SEC, the Appointed Actuary may want to evaluate their final wording for consistency with pertinent GAAP disclosures.

5.3.5 Extended reporting endorsements

In item 12 of Exhibit B, the Appointed Actuary is required to disclose the total claims-made extended loss and expense reserve (greater than or equal to Schedule P interrogatories) that the company carries as a loss reserve (item 12.1) and/or unearned premium reserve (item 12.2).

This section provides discussion and illustrative wording around this particular disclosure item.

5.3.5.a Definitions

Extended Reporting Endorsements – *"Endorsements to claims-made policies covering insured events reported after the termination of a claims-made contract but subject to the same retroactive dates where applicable."*[66]

There are essentially two types of extended reporting endorsements, those that extend reporting of claims-made policies for a defined period, such as one or two years, and those that extend reporting for an indefinite period.

Where extended reporting endorsements provide coverage for only a fixed reporting period, the premium is earned over that period, with an unearned premium reserve recorded for the unexpired portion of the premium. Associated losses are recorded as reported, with incurred but not reported (IBNR) loss recorded in the loss reserves as the coverage is provided. Where the endorsements provide coverage for an indefinite reporting period, premium is fully earned and the liability associated with associated IBNR claims is recognized immediately.[67]

Additionally, certain claims-made policies include provisions such as DDR. DDR provisions generally extend reporting under a claims-made policy for an indefinite period, at no additional cost, in the event that the insured dies, becomes disabled or retires during the policy period. Because coverage is extended at no additional charge, a portion of the claims-made premium should be recorded as a policy reserve for liability stemming from this coverage provision. This is an example of what is being requested in Exhibit B, item 12. According to SSAP No. 65,

> *Some claims-made policies provide extended reporting coverage at no additional charge in the event of death, disability, or retirement of a natural person insured. In such instance, a policy reserve is required to assure that premiums are not earned prematurely. The amount of the reserve should be adequate to pay for all future claims arising from these coverage features, after recognition of future premiums to be paid by current insureds for these benefits. The reserve, entitled "extended reporting endorsement policy reserve" shall be classified as a component part of the unearned premium reserve considered to run more than one year from the date of the policy.*[68]

[66] SSAP 65, paragraph 3c (Appendix IV).
[67] SSAP 65, paragraph 7 (Appendix IV).
[68] SSAP 65, paragraphs 8 (Appendix IV).

Additionally, to the extent that a premium deficiency reserve exists under extended reporting endorsements the amount should be recognized. According to SSAP No 65:

> *When the anticipated losses, loss adjustment expenses, and maintenance costs anticipated to be reported during the extended reporting period exceed the recorded unearned premium reserve for a claims-made policy, a premium deficiency reserve shall be recognized in accordance with SSAP No. 53—Property Casualty Contracts—Premiums*[69]

5.3.5.b Discussion

The scope of the Appointed Actuary's SAO includes the total claims-made extended loss and expense reserves reported in Exhibit B, item 12. While these provisions are often found in Medical Professional Liability policies, the Appointed Actuary is reminded that the RELEVANT COMMENT paragraphs, as well as the corresponding entries in Exhibit A and Exhibit B, item 12 should include all of the company's extended loss and expense reserves, not just the Medical Professional Liability portion of these reserves reported in the Schedule P Interrogatory #1. Where values are reported for that interrogatory, the Appointed Actuary may want to confirm that the value reported in Exhibit B, Disclosure 12 is at least as high as those interrogatory values.

Note:

- Some Directors & Officers Liability (D&O) policies may also have similar provisions that cover suits against past directors and officers after they leave the company (albeit possibly only for a limited time after the claims-made policy expiration).
- Schedule P Interrogatory #1 asks for the amount of the DDR reserve for the Medical Professional Liability line of business that is reported as an unearned premium reserve (per SSAP No. 65) separately from the amount reported as loss or LAE reserve, if any. This is consistent with the NAIC SAO reporting requirement of Other Premium Reserve items in Exhibit A, item 9, and Other Loss Reserve items in Exhibit A, item 6.
- References to "activated tail" and "paid tail" relate to "triggered" or "issued" reporting endorsements, and, therefore, any related loss reserves are not considered to be "extended loss and expense reserves."

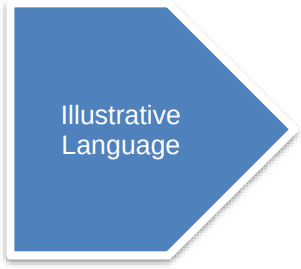
5.3.5.c Illustrative language

If there are contracts of this type with material levels of reserves, the Appointed Actuary might find it appropriate to use wording similar to the following:

[69] SSAP 65, paragraphs 9 (Appendix IV).

The Company writes extended loss and expense contracts on claims-made professional liability policies, which provide extended reporting coverage in the event of death, disability, or retirement at no additional premium charge. The Company's accrual for this liability is included in its unearned premium reserves and is shown in item 9 on Exhibit A.

Alternatively, if the material accrual for these contracts is recorded as loss reserves, the Appointed Actuary may choose to use wording similar to the following:



The Company writes extended loss and expense contracts on claims-made professional liability policies, which provide extended reporting coverage in the event of death, disability, or retirement at no additional premium charge. The Company's accrual for this liability is included in its loss and loss adjustment expense reserves and is shown in item 6 on Exhibit A.

5.3.6 Accident and Health Long Duration Contracts

In item 13 of Exhibit B, the Appointed Actuary is required to disclose the net reserves for Accident and Health ("A&H") Long Duration contracts. Specifically, items for losses, loss adjustment expense reserves, unearned premium reserves and each write-in item need to be listed.

A&H Long Duration contracts are defined in the NAIC SAO instructions to be:

> *A&H contracts in which the contract term is greater than or equal to 13 months and contract reserves are required. See Schedule H instructions for a description of categories of contract reserves as well as policy features that give rise to contract reserves. Two specific examples of contracts that typically require contract reserves are long-term care and disability income insurance.*

The Schedule H instructions state:

> *Companies must carry a reserve for any block of contracts for which future gross premiums when reduced by expenses for administration, commissions, and taxes will be insufficient to cover future claims or services.*

For most P&C companies with A&H Long Duration contracts, these relevant comments would be all that is required from the opining actuary.

The Appointed Actuary is not required to opine on the reasonableness of these reserves in isolation. The 2021 AOWG Regulatory Guidance states:

> *The Appointed Actuary is not asked to opine on the reasonableness of the reserves associated with A&H Long Duration Contracts except to the extent that the reserves are included within the amounts reported on Exhibit A of the Actuarial Opinion.*

However, for companies with over 10,000 in force lives covered by long-term care (LTC) contracts as of the valuation date, the Appointed Actuary is required to perform an additional asset adequacy analysis for those contracts per Actuarial Guideline LI ("AG 51"). Per the NAIC SAO Instructions, "*[t]he Actuarial Report and workpapers summarizing the results, assumptions and testing procedures for the asset adequacy testing of LTC business must be in compliance with AG 51 requirements*". It is COPLFR's understanding that only a small number of P&C companies are subject to these requirements.

5.3.6.a Illustrative Language

If there are contracts of this type with material levels of reserves, the Appointed Actuary may choose to use wording similar to the following:

The Company writes A&H Long Duration Contracts where the contract term is greater than or equal to 13 months and contract reserves are required. The Company's accrual for this liability is shown in item 13 on Exhibit B.

5.3.7 Other Items

Item 14 of Exhibit B provides a place for disclosure of "Other items on which the Appointed Actuary is providing relevant comment…" This means that if item 14 of Exhibit B of the SAO includes a non-zero value (or values), then the SAO should include RELEVANT COMMENT paragraph(s) with discussion of the significance of each item(s) individually and within context of the other disclosure items in Exhibit B.

5.3.7.a Discussion

Item 14 of Exhibit B serves as a "catch-all" for other items the Appointed Actuary is discussing in RELEVANT COMMENTS section of the SAO, that are not otherwise already disclosed within Exhibit B. While the majority of SAOs do not contain anything under item 14, if the Appointed Actuary believes it is appropriate to disclose an item within the RELEVANT COMMENTS section it should also be disclosed, along with the source of the figure, in Exhibit B.

P&C Long Duration Contracts formed a part of the RELEVANT COMMENTS section in the 2018 Practice Note. However, if the resultant liabilities are material, they should be listed in Exhibit A and opined on in item (D) of the OPINION paragraph (see section 4.8).

The listing of potential risk factors in section 5.1.1 of this document may provide some instances of items that could be disclosed within item 14 of Exhibit B.

5.3.7.b Illustrative language that could be appropriate in this situation

Situation 1: The company's reserves include an explicit risk margin and are discounted. The Appointed Actuary discusses each of these items individually and combined in RELEVANT COMMENT paragraphs and uses item 14 of Exhibit B to identify the amount of risk margin.

The Company has represented that the carried reserves include an explicit risk margin. The amount of risk margin as of December 31, 2021 is $x.x million on a net of reinsurance basis and is shown as item 14 on Exhibit B. The amount of discount is X% of the Company's net loss and LAE reserves and Y% of the Company's policyholders surplus.

The combined effect of the Company's discount and risk margin is to decrease the carried net loss and loss adjustment expense reserve by $y.y million (or approximately z.z%) if compared to the implied undiscounted reserve with no risk margin.

Situation 2: The company's reserves are stated net of policyholder deductibles, and the Appointed Actuary has identified the collectability of such as a company specific risk factor.

The Company's carried net loss and loss adjustment expense reserve is stated net of outstanding policyholder deductibles. The amount of outstanding policyholder deductibles is $x.x million, shown as item 14 on Exhibit B, and represents X% of the Company's net loss and LAE reserves and Y% of the Company's policyholders surplus. Due to the significance of this amount, I have identified the collectability and/or timing of reimbursement as a Company specific risk factor.

Situation 3: The unearned premium reserve for P&C Long Duration Contracts is immaterial in relation to the aggregate of the loss, LAE, and P&C Long Duration unearned premium reserves. When the company writes an amount of P&C Long Duration Contracts that develop an unearned premium

reserve that is immaterial when combined with the loss reserves, the Appointed Actuary would be prudent to include the amounts in Exhibit A: SCOPE (items 7 and 8) but need not include item (D) in the OPINION paragraph. A brief disclosure in the RELEVANT COMMENTS section of the SAO may be worded along the following lines:

Total net unearned premium for the Company as recorded on the Liabilities, Surplus and Other Funds page, Unearned premiums line of the Annual Statement is $_____. The unearned premium for P&C Long Duration Contracts is _____, representing __percent of the total net unearned premium for the Company. This component of the unearned premium is not material to the Company when combined with the loss and loss adjustment expense reserves. I therefore relied on the Company for its representation of the reasonableness of the unearned premium reserves.

5.4 Reinsurance

According to the NAIC SAO Instructions,

> *RELEVANT COMMENT paragraphs should address reinsurance collectability, retroactive reinsurance and financial reinsurance.*[70]

Section 5.4.1 covers reinsurance collectability whereas 5.4.2 discusses retroactive reinsurance and section 5.4.3 encompasses financial reinsurance. Further discussion regarding retroactive reinsurance and financial reinsurance is available in Appendix III.4.

5.4.1 Reinsurance Collectability

According to the NAIC SAO Instructions,

> *"The Appointed Actuary's comments on reinsurance collectability should address any uncertainty associated with including potentially-uncollectable amounts in the estimate of ceded reserves. Before commenting on reinsurance collectability, the Appointed Actuary should solicit information from management on any actual collectability problems, review ratings given to reinsurers by a recognized rating service, and examine Schedule F for the current year for indications of regulatory action or reinsurance recoverable on paid losses over ninety (90) days past due. The comment should also reflect any other information the Appointed Actuary has received from management or that is publicly available about the capability or willingness of reinsurers to pay claims. The Appointed*

[70] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

Actuary's comments do not imply an opinion on the financial condition of any reinsurer."[71] [72]

Additionally, section 3.10 of ASOP No. 36 states that if "…the amount of ceded reinsurance is material, the actuary should consider the collectibility of the ceded reinsurance in evaluating net reserves. The actuary should solicit information from the management regarding collectibility problems, significant disputes with reinsurers, and practices regarding provisions for uncollectible reinsurance. The actuary's consideration of collectibility does not imply an opinion on the financial condition of any reinsurer."[73]

5.4.1.a Discussion

Ceded reinsurance recoverable balances are shown in several places in the Annual Statement:

- Schedule F, Part 3 lists all ceded reinsurance recoverable balances in one place. These balances include amounts billed but unpaid (labelled "Reinsurance Recoverable on Paid Losses" in Schedule F[74]), ceded case reserves, ceded incurred but not reported (IBNR) reserves, ceded unearned premiums and even ceded contingent commissions. (Presumably the last two items are not relevant to the SAO as they are not "loss" items.)
- Page 2 (Assets) contains ceded recoverable amounts on paid losses.

[71] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[72] For a Company also filing financial statements for US GAAP, uncollectible reinsurance reserves (URR) related to credit risk are set based on expected ultimate uncollectible amount. The URR is meant to address uncollectible amounts due to both credit risk and dispute risk.
[73] ASOP No. 36
[74] When an insurer bills its reinsurer under a ceded reinsurance contract for a paid loss, this is recorded under statutory and US GAAP accounting as a ceded paid amount when billed, even if it hasn't been collected yet. Statutory accounting also requires the ceded paid entry to be reversed if the bill is ultimately written off as uncollectible, which results in an increase in paid and incurred losses unless offset by a reserve change at the time of the write-off.

- Page 3 (Liabilities) includes ceded case reserves and ceded IBNR reserves in the net loss reserves shown.
- The Underwriting & Investment Exhibit and Schedule P show ceded case reserves and IBNR reserves, although these may be on a pool basis in Schedule P.
- Note 23 of the statutory Annual Statement also includes discussion of various reinsurance topics, including Note 23D (*Uncollectible Reinsurance*).

FAQ: Don't I only have to look at the collectability of ceded loss reserves and not ceded paid?

A: Not necessarily. Reinsurance collectability issues include the collectability of amounts billed to reinsurers but not yet collected. These billed but uncollected balances are included in Schedule F-Part 3, Column 16, and can also be found on Page 2, Line 16. If those billed amounts are not collected then the original ceded paid entry is reversed, which could impact reported loss development.

Collectability of ceded unpaid loss and LAE (and ceded billed but uncollected loss and LAE when material) will generally have an effect of the future development of reserves as well as surplus. The NAIC requires commentary on reinsurance collectability.

The Appointed Actuary might find it appropriate to discuss the materiality of amounts ceded to troubled reinsurers (e.g., those in liquidation or rehabilitation) if the overall amount is material. The Appointed Actuary might also find it appropriate to discuss the materiality of major ceded reinsurance concentrations, either concentrations to a single reinsurer or pertaining to a single (or a select few) event(s).

This discussion may be aided by investigation into GAAP disclosures of ceded reinsurance concentration (for SEC filers), or by analysis of ceded reinsurance write-offs found in Note 23.D. In addition, Schedule F, Part 3 provides detail on the amount of reinsurance recoverable by reinsurer. The confidential RBC filing will also include a summarization of the Schedule F, Part 3 ceded balances by reinsurer credit rating.

If any issues are raised by the above considerations, the Appointed Actuary might find it appropriate to provide some discussion as to amounts already set up to cover this risk (e.g., uncollectible reinsurance reserve, Schedule F penalty). The Appointed Actuary might also consider the effects of any existing collateral. If the amounts already set up are deemed by the Appointed Actuary to be inadequate, the Appointed Actuary may choose to indicate how the shortfall is being treated in the SAO. For example, is the shortage in these amounts being added to the otherwise indicated liabilities? Is the reserve being evaluated net of the indicated and held amounts for reinsurance collectability?

At various times, publicly available information materially affects the perceived value of ceded reinsurance. The NAIC SAO Instructions provide that the Appointed Actuary's comments should also reflect any such information. For example, the Appointed Actuary may want to comment on large cessions to a company recently placed under regulatory control, if the Appointed Actuary has knowledge of such cessions.

In some cases, other parties may already perform the above analysis. When the Appointed Actuary is relying on other parties for the reinsurance collectability analysis, the Appointed Actuary may find it appropriate to consider to so state and to discuss the qualifications of these parties.

Section 3.4 of ASOP No. 36 contains other provisions relating to other disclosures about uncollectible recoverable.

The Appointed Actuary might consider whether potential uncollectible cessions create risks and uncertainties to be disclosed and contribute to risk of material adverse deviation. Whether such a situation leads to a qualified opinion might also be a consideration.

Note:

- Reinsurance collectability can be impacted by both inability to pay (sometimes called credit default risk) and unwillingness to pay (dispute risk). It can also be caused by overly aggressive estimates of ceded loss potential or by overly aggressive billing of the reinsurer by the cedant.
- In some situations, it may be very unclear what the proper ceded amounts should be under a contract.
- A change made in 2020 by the NAIC (2020-09BWG) may be relevant to Appointed Actuaries reviewing ceded reinsurance collectability. The NAIC has eliminated category 7 as an option for Schedule F, Part 3, Column 34—Reinsurer Designation Equivalent, and combined reinsurers that would have fallen in that rating into category 6. This change impacts the calculations for Schedule F, Part 3, Column 36; reinsurers in the prior category 7 had a 10% charge in column 36 while reinsurers in category 6 have a 14% factor.

5.4.1.b Illustrative language

The Appointed Actuary might find it appropriate to use wording similar to one of the following examples.

Situation 1: Immaterial ceded reinsurance levels

Use of ceded reinsurance is minimal, resulting in an immaterial risk of uncollectible reinsurance relative to loss and loss adjustment expense reserves and surplus. (In addition, the Company's ceded billed but uncollected balances are not material.)

Situation 2: Material amounts of ceded reinsurance, with none to troubled reinsurers

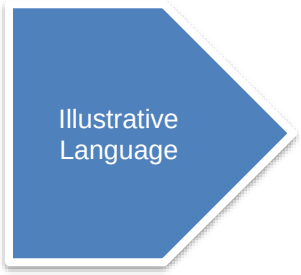
Ceded loss reserves are all with residual market pools, with companies rated XX or better by A.M. Best Co. (or its substantive equivalent), or fully collateralized. Past collectability issues and current amounts in dispute have been reviewed and found to be immaterial relative to surplus. My opinion on the loss and loss adjustment expense reserves net of ceded reinsurance assumes that all ceded reinsurance is valid and collectible.

Note that even if reinsurance is with highly rated reinsurers, it is possible that reinsurance credits are overstated. If such credits were overstated in the past, an analysis of past uncollectible levels or of amounts currently in dispute may discover such an overstatement.

Situation 3: Potential collectability problems – insolvent reinsurer

According to the Company's Schedule F disclosures, the Company cedes $XX million of loss and LAE reserves to currently insolvent reinsurers. Provisions for uncollectible reinsurance account for $YY million of this amount. In forming my opinion of the net reserves, I have recognized this $YY million as uncollectible.

Situation 4: Potential collectability problems - public information



The Company has a high portion of its reinsurance recoverable with the XYZ Corporation, which has recently had its A.M. Best rating downgraded. I have reviewed the Company's exposure to this reinsurer, the ability to offset recoveries with amounts payable, and the Company's reserves for uncollectible reinsurance and found… {Note: The Appointed Actuary could go on to discuss a need to adjust the indicated net reserves, or state that the situation has been adequately addressed.}

Situation 5: Potential collectability problems – dispute with reinsurer

The Company has a large ceded reserve with regard to {event X}, with a public dispute with its reinsurers with regard to that cession. The inability of the Company to collect on that cession would be material to its {surplus and/or reserves}. My analysis assumes that such cession will {be collectible, uncollectible, partially collectible, etc.}.

5.4.2 Retroactive Reinsurance

Note the requirement to discuss retroactive reinsurance only pertains to those treaties following retroactive reinsurance accounting, not those following prospective reinsurance accounting. This issue is discussed more in the definitions section below.

5.4.2.a Definitions

According to the NAIC SAO Instructions:

> *Retroactive reinsurance refers to agreements referenced in SSAP No. 62R, Property and Casualty Reinsurance, of the NAIC* Accounting Practices and Procedures Manual.[75]

FAQ: Is all reinsurance entered into after policy expiration accounted for as retroactive reinsurance?

A: No. SSAP 62R makes exceptions for certain retroactive reinsurance contracts between affiliates, such as those undertaken to reconfigure a quota share reinsurance pool within a group.

The SAO requirement regarding retroactive reinsurance applies only to contracts given retroactive reinsurance accounting treatment. Per SSAP 62R, retroactive reinsurance accounting does not apply to all retroactive reinsurance contracts. SSAP 62R paragraph 31 lists the types of retroactive reinsurance contracts that qualify for prospective reinsurance accounting treatment. A common example of a retroactive reinsurance contract that qualifies for prospective reinsurance accounting treatment is an intercompany reinsurance agreement among companies 100% owned by a common parent (provided certain other criteria are met). See Appendix III.4 for more discussion of these exceptions.

5.4.2.b Discussion

Comment on this item is always required by the NAIC SAO Instructions.

The NAIC SAO Instructions require that any write-in retroactive reinsurance assumed reserves that are reported on the Annual Statement balance sheet also be listed in the SAO's Exhibit A: SCOPE. Retroactive reinsurance assumed reserves (and retroactive reinsurance ceded reserves) are reported as a write-in line of the balance sheet and are not included in any loss reserve schedules of the Annual Statement such as Schedule P or the Underwriting & Investment Exhibit. Even though retroactive

[75] SSAP No. 62R (Appendix IV).

reinsurance ceded reserves are not specifically reported in Exhibit A, they are subject to the discussion requirement in the RELEVANT COMMENT section of the NAIC SAO Instructions.

Reinsurance contracts that constitute retroactive reinsurance are required to be accounted as per paragraph 29 of SSAP 62R, and are disclosed in Note 23F "Retroactive Reinsurance."

Annual Statement General Interrogatories, Part 2, No. 7 and No. 9, which disclose certain aspects of the company's use of ceded reinsurance, will ordinarily provide the Appointed Actuary with necessary information. Any positive response to Interrogatory No. 9.1 or 9.2 will require the company to file a reinsurance summary supplement. In addition, the CEO and CFO must provide a reinsurance attestation with the Annual Statement, which may contain additional valuable information about the company's ceded reinsurance contracts.

For accounting purposes, the company is required to determine whether a particular contract constitutes retroactive reinsurance (e.g., loss portfolio transfer). If the company accounted for any contract as retroactive reinsurance, it may be appropriate for the Appointed Actuary to give it similar treatment in evaluating the reserves. It may also be appropriate for the Appointed Actuary to indicate in the SAO whether any contract was accounted for in this way and, if so, whether the Appointed Actuary's evaluation of the reserves is consistent with that treatment.

FAQ: Can I find disclosure of retroactive reinsurance in GAAP statements?

A: Not necessarily. GAAP treats retroactive reinsurance differently from statutory accounting, as GAAP does allow a deduction for net loss reserves for retroactive reinsurance that contains sufficient risk transfer.

The Appointed Actuary typically becomes familiar with the important aspects of the reinsurance coverage but can rely on summaries of the reinsurance coverage prepared by others, rather than reading and evaluating each contract. However, if the Appointed Actuary is aware of a determination that he or she believes to be clearly incorrect, the Appointed Actuary ordinarily would indicate this in the SAO and describe his or her treatment of the contract(s) in question and the impact of this adjustment on the Appointed Actuary's SAO.

It typically is not necessary to identify specific reinsurers or contracts in this comment.

Note:

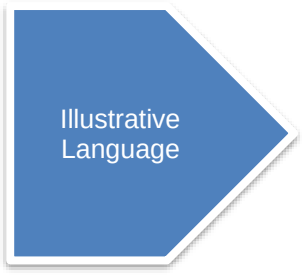
- Retroactive reinsurance is a contra-liability for the ceding company and a liability for the assuming company. Exhibit A: SCOPE items 1, 2, 3, and 4 typically are not reduced by the retroactive reinsurance reserve ceded and thus are gross of retroactive reinsurance. Exhibit A: SCOPE items 1, 2, 3, and 4 generally exclude retroactive reinsurance assumed, as such assumed reserves are recorded on a write-in line on Page 3 of the Annual Statement. The Page 3 write-in item reserve, "Retroactive Reinsurance Reserve Assumed" is disclosed in item 5 of Exhibit A: Scope and included in the Appointed Actuary's SAO.

- Just like prospective reinsurance contracts, it is possible for cessions under retroactive reinsurance contracts to be overstated. The Appointed Actuary may want to be aware of this possibility if consideration is made of the ceded retroactive reinsurance in a supporting analysis.

5.4.2.c Illustrative language

The Appointed Actuary might find it appropriate to use wording similar to one of the following examples.

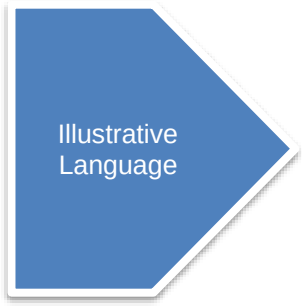
If there are no contracts of these types:



Based on discussions with Company management (or [identify other appropriate sources]) and its description of the Company's ceded (and/or assumed) reinsurance, I am not aware of any reinsurance contract (having a material effect on the loss or loss adjustment expense reserves) that either has been or should have been accounted for as retroactive reinsurance.

If a similar conclusion occurs with regard to financial reinsurance (discussed in the next section), the Appointed Actuary may want to combine the two conclusions by adding the words "*or financial reinsurance"* to the above illustration.

If a contract was appropriately accounted for as retroactive reinsurance:



One ceded reinsurance contract was accounted for by the Company as retroactive reinsurance. As a result, my evaluation of the net reserves was performed on a gross basis with regard to that contract. Based on discussions with Company management [or identify appropriate sources] and its description of the Company's ceded (and/or assumed) reinsurance, I am not aware of any other reinsurance contract (having a material effect on the loss or loss adjustment expense reserves) that either has been or should have been accounted for as retroactive reinsurance.

If a contract was appropriately accounted for as retroactive reinsurance, and the materiality standard used was based solely on surplus impact (and the risk of a RMAD impact on surplus was materially affected by this retroactive reinsurance and this was considered in the RMAD assessment):

A ceded reinsurance contract was accounted for by the Company as retroactive reinsurance, covering [describe the ceded losses] up to a limit of [limit], with [remaining amount] remaining. My evaluation of the net reserves was performed on a gross basis with regard to that contract, but given that the basis of my materiality standard was surplus, my evaluation as to whether a RMAD exists did consider the impact of this contract.

The above illustrative language implies that this ceded retroactive contract would also be mentioned in the earlier RMAD discussion.

5.4.3 Financial reinsurance

5.4.3.a Definitions

According to the NAIC SAO Instructions:

> *"Financial reinsurance refers to contracts referenced in SSAP No. 62R in which credit is not allowed for the ceding insurer because the arrangements do not include a transfer of both timing and underwriting risk that the reinsurer undertakes in fact to indemnify the ceding insurer against loss or liability by reason of the original insurance."*[76]

See Appendix III.4 for more discussion of this topic.

5.4.3.b Discussion

Comment on this item is always required by the NAIC SAO Instructions.

For accounting purposes, the company is required to determine whether a particular contract constitutes financial reinsurance. If the company accounted for any contract as financial reinsurance, it may be appropriate for the Appointed Actuary to give it similar treatment in evaluating the reserves. It may also be appropriate for the Appointed Actuary to indicate in the SAO whether any contract was accounted for in this way and, if so, whether the Appointed Actuary's evaluation of the reserves is consistent with that treatment.

Reinsurance contracts that constitute financial reinsurance are required to be accounted for using deposit accounting, per SSAP 62R, and are disclosed in Note 23G "Reinsurance Accounted for as a Deposit."[77]

[76] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[77] SSAP No. 62R, paragraph 35 (Appendix IV).

If the Appointed Actuary is reviewing contracts accounted for as financial reinsurance, the Appointed Actuary may want to review more than just the loss and loss adjustment expense portion of that contract. That is because the risk transfer requirements provide for analysis of the entire contract, including possible loss sensitive features such as sliding scale commissions that may negate any risk transfer occurring from just the loss provisions of the contract.

The determination of whether a particular contract is financial reinsurance is sometimes a matter of judgment, and, customarily, that judgment is made by the company's accounting experts (but likely with substantial input from actuaries, as many insurers rely on actuaries to perform the technical risk transfer analysis). The scope of the SAO does not include an evaluation of risk transfer or an assessment of the appropriateness of the accounting treatment of the reinsurance contracts of a company.

The Academy is currently in the process of updating its 2007 practice note, *Reinsurance Attestation Supplement 20-1: Risk Transfer Testing Practice Note*, which was itself an update to its 2005 *Risk Transfer in P&C Reinsurance: Report to the Casualty Actuarial Task Force of the National Association of Insurance Commissioners*. While the scope of the SAO does not include an evaluation of risk transfer or an assessment of the appropriateness of the accounting treatment of the reinsurance contracts of a company, the Appointed Actuary may review the procedures that the company utilizes to determine risk transfer for its reinsurance contracts in order to be in a position to properly apply the NAIC SAO Instructions.

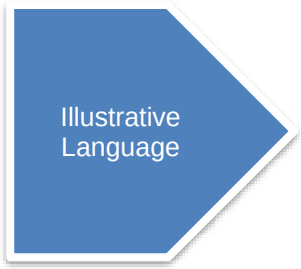
Note:

- The NAIC has previously investigated certain "Risk Limiting" reinsurance contracts due to concerns that the level of risk transfer is not clear as a result of certain loss sensitive features. If the Appointed Actuary does perform an analysis of such contracts, the Appointed Actuary may want to investigate any loss sharing features (such as sliding scale commissions) in the analysis.

5.4.3.c Illustrative language

The Appointed Actuary may choose to use wording similar to one of the following examples.

If there are no contracts accounted for as financial reinsurance:



Based on discussions with Company management {or [identify other appropriate sources]} and its description of the Company's ceded {and/or assumed} reinsurance, I am not aware of any reinsurance contract {having a material effect on the loss or loss adjustment expense reserves} that either has been or should have been accounted for as financial reinsurance.

If the Appointed Actuary has a similar conclusion with regard to retroactive reinsurance, the Appointed Actuary may want to combine the two discussions.

If a contract was appropriately accounted for as financial reinsurance:

One ceded reinsurance contract was accounted for by the Company as financial reinsurance. As a result, my evaluation of the net reserves was performed on a gross basis with regard to that contract. Based on discussions with Company management {or identify appropriate sources} and its description of the Company's ceded {and/or assumed} reinsurance, I am not aware of any other reinsurance contract {having a material effect on the loss or loss adjustment expense reserves} that either has been or should have been accounted for as financial reinsurance.

5.5 IRIS Ratios

According to the NAIC SAO Instructions,

> *"If the Company's reserves will create exceptional values under the NAIC IRIS Tests for One-Year Reserve Development to Policyholders' Surplus, Two-Year Reserve Development to Policyholders' Surplus or Estimated Current Reserve Deficiency to Policyholders' Surplus, the Appointed Actuary must include RELEVANT COMMENT on the factors that led to the unusual value(s)."*[78]

5.5.1 Definitions

IRIS Test 11 One-Year Reserve Development to Surplus measures the development of net loss reserves over the past calendar year, relative to prior year surplus. The usual range for the ratio includes results less than 20 percent.

IRIS Test 12 Two-Year Reserve Development to Surplus measures the development of net loss reserves over the past two calendar years, relative to surplus at the end of the second prior year. The usual range for the ratio includes results less than 20 percent.

IRIS Test 13 Estimated Current Reserve Deficiency to Surplus takes the net outstanding loss reserves for the most recent prior two calendar years relative to the calendar year earned premium for those years and adds to the reserves the development that has emerged over that period (one-year development for the first prior calendar year; two-year development for the second prior calendar year). The average of the resulting two "adjusted" loss reserve ratios is applied to earned premium for the most recent calendar year to determine what the outstanding loss reserve should be according to this estimate. The difference

[78] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

between this reserve estimate and the recorded loss reserve is related to current year surplus. A calculated deficiency in recorded loss reserves of 25 percent or more is deemed to be unusual.

The NAIC Insurance Regulatory Information System (IRIS) Ratios Manual contains calculation details along with Annual Statement source references for all of the IRIS Ratios.

5.5.2 Discussion

The Appointed Actuary is required to provide commentary on the factors underlying exceptional values calculated under the NAIC IRIS Tests for One-Year Reserve Development to Surplus, Two-Year Reserve Development to Surplus, and Estimated Current Reserve Deficiency to Surplus. If one or more of these tests' calculations result in exceptional value(s), the Appointed Actuary must include a RELEVANT COMMENT paragraph to explain in detail the primary reasons for the exceptional value(s). The Appointed Actuary may want to consider potential responses in the AOS section E for consistency with commentary in the SAO on IRIS test exceptional values.

An explanatory paragraph is not required unless the calculations of the IRIS tests create exceptional values. However, even when there are no exceptional values, the Appointed Actuary may want to include wording indicating that he/she reviewed the calculations of the IRIS tests and noted no exceptional values.

Note:

- Part E of Paragraph 5 of the AOS addresses persistent adverse development. The NAIC AOS Instructions are included as Appendix I.2.

5.5.3 Illustrative language

The Appointed Actuary may choose to use wording similar to one of the following examples, to the extent they apply:

During the past year, the Company strengthened net reserves for prior accident years by $100,000,000. Most of the increase was for asbestos and environmental claims included in the prior year row. This extraordinary loss reserve strengthening caused exceptional values for the NAIC IRIS Tests regarding One-Year Reserve Development to Surplus, Two-Year Reserve Development to Surplus, and/or Estimated Current Reserve Deficiency to Surplus.

or

During the past year, the Company booked significant amounts of additional premiums in long-tail lines from various loss-sensitive programs. These additional premiums caused an exceptional value for the IRIS test regarding Estimated Current Reserve Deficiency to Surplus. These lines have also shown some non-substantial upward reserve development.

When the IRIS test calculations produce no exceptional values, the Appointed Actuary may still choose to include an explanatory paragraph, with possible wording similar to the following:

I have examined the NAIC IRIS tests for One-Year Reserve Development to Surplus, Two-Year Reserve Development to Surplus, and Estimated Current Reserve Deficiency to Surplus, and no exceptional values were observed.

5.6 Changes in Methods and Assumptions

According to the NAIC SAO Instructions,

> *"If there has been any significant change in the actuarial assumptions and/or methods from those previously employed, that change should be described in a RELEVANT COMMENT paragraph. If the Appointed Actuary is newly-appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this."*[79]

[79] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

5.6.1 Discussion

The NAIC requirement is similar to that in ASOP No. 36, section 4.2.a required disclosure of changes in the Appointed Actuary's assumptions, procedures, or methods from those employed in the most recent prior opinion prepared in accordance with ASOP No. 36 if the Appointed Actuary believes that such changes are likely to have a material effect on the Appointed Actuary's estimate(s) of liabilities for which reserves the Appointed Actuary is opining. The Appointed Actuary is obliged to comment only on changes that are, in the Appointed Actuary's professional judgment, material to the actuary's unpaid claim estimate.

Pursuant to ASOP No. 36, section 3.8, neither the use of assumptions, procedures, or methods for new reserve segments that differ from those used previously, nor periodic updating of experience data, factors, or weights constitute a change in assumptions, procedures, or methods for this disclosure.

According to the NAIC SAO Instructions, when an Appointed Actuary is changing assumptions and/or methods from the prior year, and the impact of the change is not known, the Appointed Actuary should disclose the change. It is advisable in most instances to describe briefly the change itself and the reason for it.

If there is a change in Appointed Actuary, the new Appointed Actuary is not expected to calculate the year-end unpaid claim estimates using a predecessor's methodology. Given each actuary's varying comfort level with different techniques, and the use of custom reserve review packages by various reserve practitioners, it is impractical to expect an Appointed Actuary to always copy a predecessor's methodology. However, the new Appointed Actuary may choose to become familiar with his or her predecessor's basic methodology and conclusions. If the changes in assumptions, procedures or methods are likely to have a material impact on unpaid claim estimates, the new Appointed Actuary may choose to note the difference(s) in the SAO.

FAQ: I changed the methods and assumptions from the prior year; do I need to disclose the changes?

A: Per the Instructions and ASOP No. 36, if the effect of the change is material, then you should disclose the change; if the effect of the change is not material, disclosure can be made at your discretion.

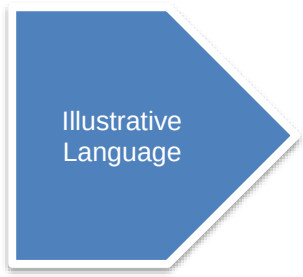
If the newly Appointed Actuary is able to review the prior opining actuary's work, section 3.8 of ASOP No. 36 states that the actuary should determine whether the current assumptions, procedures, or methods differ from those employed in providing the most recent prior opinion. In the event that the current assumptions, procedures, or methods differ from those of the prior opinion, then the actuary should consider whether the changes are likely to have had a material effect on the actuary's unpaid claim estimate.

ASOP No. 36 requires disclosure of instances in which the Appointed Actuary is not able to review the prior Appointed Actuary's work. In this event, according to section 4.2.a, the Appointed Actuary should disclose that the prior assumptions, procedures, and methods are unknown.

5.6.2 Illustrative language

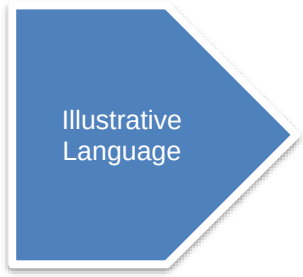
The Appointed Actuary may choose to use wording similar to one of the following examples.

Situation 1: Material change due to distortions affecting old method



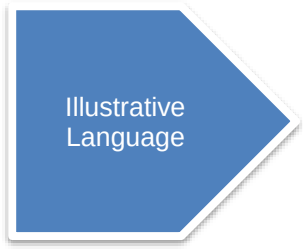
A material change in actuarial methods was made in the analysis supporting this opinion. The change entailed using a reported loss development procedure in place of the paid loss development procedure used last year. This change was necessitated by the implementation of a new claim payment system, distorting the paid data but leaving unchanged the case incurred.

Situation 2: Change made, materiality unknown



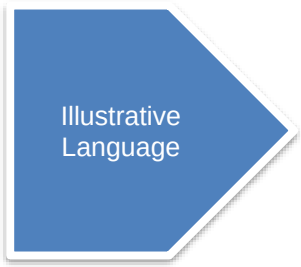
A change in actuarial methods was made in the supporting reserve analysis (versus the prior year). The materiality of this change could not be determined. The change, developing auto liability losses with bodily injury and property damage combined rather than separated, was necessitated due to the implementation of a new claim system. The new system did not contain the data in the same detail as was available last year.

Situation 3: Not possible to quantify impact of changes from the prior Appointed Actuary



The Appointed Actuary has changed from the prior year. A comparison of my estimates to the prior Appointed Actuary's estimates is not possible because [explain why: for example, the analysis done by the prior Appointed Actuary was performed using a different aggregation of the data]. Therefore, I am unable to determine whether there has been a material change in actuarial assumptions or methodology.

Situation 4: Not able to review the work of the prior Appointed Actuary



The Appointed Actuary has changed from the prior year. I was not able to review the work of the prior Appointed Actuary. Therefore, the prior assumptions, procedures, and methods are unknown and I am unable to determine whether there has been a material change in actuarial assumptions or methodology.

5.7 COVID-19 Considerations

The prior subsections in Chapter 5 relate to RELEVANT COMMENTS as outlined in the NAIC SAO Instructions. Unlike these prior subsections, which followed the NAIC SAO Instructions, we are providing this discussion of COVID-19 within this RELEVANT COMMENTS Chapter due to its broad impact. There is no explicit comment regarding COVID-19 within the NAIC SAO Instructions. However, COPLFR believes that including information on resources and potential considerations in the 2020 and 2021 practice note could be beneficial to some Appointed Actuaries. Further, the AOWG Regulatory Guidance provides the following regarding regulatory expectation surrounding COVID-19.

> *COVID-19 and subsequent economic events have had a significant impact on 2020 accident year insurance liabilities for some lines of business. Furthermore, the effects of COVID-19 could extend to other aspects of the company's operations and the claims process. The Appointed Actuary should consider the direct impacts to loss and unearned premium reserves, claims patterns and loss trends, collectability of reinsurance and/or premiums, exposure, etc., as well as indirect impacts such as claims handling delays and procedural changes resulting from public health orders. It is important for the Appointed Actuary to understand the company's treatment of any changes stemming from COVID-19, for example premium refunds or rate reductions, in the annual financial statement. The impact of such financial reporting on assumptions and methods used in the actuarial analysis should be discussed within the Actuarial Report.*
>
> *If the impact on reserves is significant, the actuary should make relevant comments on COVID-19 impacts and discuss the corresponding actuarial assumptions in the Statement of Actuarial Opinion. Otherwise, Appointed Actuaries are still strongly encouraged to mention their review of COVID-19 effects on the company in the Statement of Actuarial Opinion, to demonstrate that it has not been overlooked or disregarded.*

The AOWG Regulatory Guidance did not update the statement for COVID-19 during 2021. However, COVID-19 is still expected to have an impact on many actuarial analyses performed in 2021, and the guidance as provided in the 2020 practice note could continue to be beneficial to some Appointed Actuaries.

There are several resources available to Appointed Actuaries with respect to considering the impact of COVID-19. The American Academy of Actuaries has a central repository of COVID-19 resources. The

P&C Financial Reporting Considerations With Respect to COVID-19 published by COPLFR contains areas of interest and responses to Frequently Asked Questions ("FAQs") regarding COVID-19 potential losses and their impact.

There have been various discussions around COVID-19 and interpretations of statutory accounting (INT) issued by the NAIC Statutory Accounting Principles (E) Working Group (SAPWG). The SAPWG website contains COVID-19 INTs and updates to Annual Statement disclosure checklists on its webpage under "related documents."

Specific areas to consider during the analysis of a Company's reserves include:

- Workers' Compensation (WC) presumptive benefit regulations, which vary by state. Certain state regulations have been passed where any employee working outside of their home who tests positive for COVID-19 is presumed to have acquired the disease related to their employment and is eligible for workers' compensation benefits.

- Loss data. For example, there were delays in the court system during 2020, which may be continuing through 2021, that could impact personal and commercial lines paid losses, reported losses, and claim counts. Other lines of business may have had increases in loss activity, or possibly changes in the types of claims and/or likelihood of loss payment.

- The COVID-19 impact on the overall economy could bring about changes in exposure assumptions that were established before COVID-19.

The above list highlights several areas for consideration but is not intended to be exhaustive; there are numerous other areas that the opining actuary may consider in the actuarial review.

There are multiple areas in a Statement of Actuarial Opinion where additional comment may be appropriate. While specific guidance related to COVID-19 impacts is not included in the sections of the practice note linked below, the general guidance can be considered with COVID-19 in mind.

- Review date (Section 3.4)
- Use of the work of another (Section 4.10)
- Company-Specific Risk Factors (Section 5.1)
- Risk of Material Adverse Deviation and the Materiality Standard (Section 5.2)
- Other Items on Which Appointed Actuary is Providing Relevant Comment (Section 5.3.7)
- Reinsurance (Section 5.4)
- Changes in Methods and Assumptions (Section 5.6)
- Extended comments on risks and uncertainties (Section 8.7)

Appointed Actuaries should consider discussing items impacted by COVID-19, either in the Statements of Actuarial Opinion or the Actuarial Report. These items and the associated disclosures may include actuarial loss data or underlying actuarial methodologies used to estimate unpaid loss and loss adjustment expenses.

The previously mentioned *P&C Financial Reporting Considerations With Respect to COVID-19* separately published by COPLFR may also provide further discussion on these and other topics.

6. Additional considerations

In this chapter we discuss the additional details regarding the format of the SAO and actions that are required when an error in the SAO has been uncovered.

6.1 Formatting requirements

There are specific requirements in terms of the format of the signature of the Appointed Actuary, the presentation of Exhibits A and B, and the technical specifications of the electronic format of Exhibits A and B. Each of these is discussed in detail in the following sections.

FAQ: Is an original signature required?

A: This depends on the requirements of each state. Suggested resources for these requirements include the 2021 P/C Loss Reserve Law Manual and state statutes, regulations and bulletins. Knowledge of and compliance with legal and regulatory requirements rests with the individual actuary. Legal counsel should be consulted where the actuary is unable to identify all relevant legal requirements.

6.1.1 Signature of the Appointed Actuary

The SAO concludes with the dated signature of the Appointed Actuary. The NAIC SAO Instructions are quite clear in terms of the presentation of the Appointed Actuary's signature.

> *The signature and date should appear in the following format:*
>
> _____
> *Signature of Appointed Actuary*
> *Printed name of Appointed Actuary*
> *Employer's name*
> *Address of Appointed Actuary*
> *Telephone number of Appointed Actuary*
> *Email address of Appointed Actuary*
> *Date opinion was rendered*[80]

6.1.2 Presentation of Exhibit A

Exhibit A should follow the same format outlined in the NAIC SAO Instructions. Every item in Exhibit A will typically contain a value, even if the company's value for an individual item is $0. Write-in lines should be inserted into Exhibit A if applicable. Also, if the Appointed Actuary is including a value, or multiple values if needed, in items 6 and/or 9, then the SAO is expected to include an

FAQ: What types of reserves may be included in Exhibit A, items 6 and 9?

A: If an actuary opines on a particular reserve segment that is not included in items 1-4 or 7-8, e.g., DDR, this may be handled in item 6 and/or 9.

[80] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

explanation in the RELEVANT COMMENTS of why that value or values are being included in the Exhibit A disclosure.

6.1.3 Presentation of Exhibit B

Exhibit B should follow the same format outlined in the NAIC SAO Instructions with no items deleted and write-in lines included if applicable.

According to NAIC SAO Instructions,

> *Exhibit B should be completed for Net dollar amounts included in the SCOPE. If an answer would be different for Direct and Assumed amounts, identify and discuss the difference within RELEVANT COMMENTS.*[81]

The information obtained in Exhibit B items 1 through 4 and 6 is normally disclosed elsewhere in the SAO. It has been added to Exhibit B in order to facilitate the capture of certain information in the company's electronic data filing.

According to AOWG Regulatory Guidance, the regulator expects the response to Exhibit B item 4 to reflect the SAO on net reserves. Therefore, if the Appointed Actuary reaches different conclusions regarding net reserves versus gross reserves (direct plus assumed reserves), then item 4 should reflect the SAO category for net reserves.

Regulators expect the answer to Exhibit B item 6 to be consistent with the disclosure in the RELEVANT COMMENTS of the SAO of whether there are significant risks or uncertainties that could result in material adverse deviation. The response *"Not Applicable"* for item 6 is intended to only be used in the situation of a company with 0 percent participation under an intercompany pooling agreement in which the lead company retains 100 percent of the pooled reserves.

In addition, as directed by section 1C of the NAIC SAO Instructions, Exhibits A and B for each company in the pool should represent the company's share of the pool and reflect values specific to the individual company. If a company is a 0 percent pool participant, then Exhibits A and B of the lead company should be attached as an addendum to the SAO of the 0 percent company.

Exhibit B item 10 is a disclosure of the sum of voluntary and involuntary participation in underwriting pools and associations. A zero entry would be unusual for workers' compensation or automobile insurers. The Appointed Actuary may choose to show the voluntary and involuntary participation separately in the body of the SAO. Note: Refer to section 5.3.3, Voluntary and/or involuntary underwriting pools and associations of this practice note for more information on the disclosure in Exhibit B, Item 10.

[81] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1)

Exhibit B item 13 was a new disclosure in the 2018 SAO. For P&C insurers with over 10,000 in-force lives from long-term care (LTC) contracts, there are additional requirements for the opining actuary. For all other P&C insurers with no LTC coverage – or fewer than 10,000 insured lives for LTC – there are no additional requirements for the opinion, except for the item 13 disclosure. Actuaries for insureds with any volume of A&H Long Duration Contracts are required to complete this item 13 disclosure. Normally any active life reserves on these A&H Long Duration Contracts would be included in item 13. Refer to 5.3.6, Accident and Health Long Duration Contracts for more information on the disclosure in Exhibit B, Item 13.

Exhibit B would typically contain information and amounts for all of items 1 through 14, even if the company's value for an individual item is $0. Also, if the Appointed Actuary is including a non-zero value or values in item 14, then the SAO would normally include, within a RELEVANT COMMENT paragraph, an explanation of why each value is being included in the Exhibit B disclosure.

6.1.4 Technical specifications of filing (i.e., data capture format of Exhibits A & B)

According to the NAIC SAO Instructions,

> *"Data in Exhibits A and B are to be filed in both print and data capture format."*[82]

In addition to filing the Annual Statement, the company is required to file certain information reported in the Annual Statement in electronic format. The information reported in Exhibit A: SCOPE and Exhibit B: DISCLOSURES of the SAO will be included in the company's electronic filing. This underscores the importance of preparing Exhibits A and B in the exact format shown in the NAIC SAO Instructions.

Note:

- For companies participating in an intercompany pool with a zero percent (0%) share, Exhibits A and B of the lead company must be attached as an addendum to the company's SAO.

6.2 Errors in SAOs

The NAIC SAO Instructions and the AOWG Regulatory Guidance include information on reissuing SAOs when the Appointed Actuary determines that the SAO submitted to the domiciliary Commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect. This includes instruction on timing, format, and content of the revised submission.

6.2.1 Definitions

According to the NAIC SAO Instructions,

[82] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

"The Actuarial Opinion shall be considered to be in error if the Actuarial Opinion would have not been issued or would have been materially altered had the correct data or other information been used. The Actuarial Opinion shall not be considered to be in error if it would have been materially altered or not issued solely because of data or information concerning events subsequent to the balance sheet date or because actual results differ from those projected."[83]

6.2.2 Discussion

NAIC SAO Instructions specify a formal process when an SAO is considered to be in error. The process involves notifications to the Board, as well as the domiciliary commissioner, as described below:

1. According to NAIC SAO Instructions, the insurer "*shall require its Appointed Actuary to notify its Board of Directors or its audit committee in writing within five (5) business days after any determination by the Appointed Actuary that the Actuarial Opinion submitted to the domiciliary commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect*"[84] and meets the definition above.

   The Appointed Actuary should include a summary of the finding of the error and an amended SAO.

2. Within five (5) business days of receipt from the Appointed Actuary, the company is required to forward a copy of the amended SAO to the domiciliary commissioner, with notification to the Appointed Actuary of doing so.

   If the Appointed Actuary does not receive such notification, the Appointed Actuary is required to notify the domiciliary Commissioner within the next five (5) business days that an amended actuarial opinion has been finalized.

FAQ: What if the actuary cannot determine what, if any, changes are needed to the SAO within the required timeline?

A: *The actuary and insurer should perform the necessary procedures to determine the impact of the SAO as soon as reasonably practical. If the insurer does not provide the necessary data and/or support within ten (10) business days, the actuary should notify the domiciliary Commissioners that the original SAO should no longer be relied upon.*

3. According to the NAIC SAO Instructions, "*if the Appointed Actuary learns that the data or other information relied upon was factually incorrect, but cannot immediately determine what, if any, changes are needed in the Actuarial Opinion, the Appointed Actuary and the company should quickly undertake procedures necessary for the Appointed Actuary to make such determination. If the insurer does not provide the necessary data corrections and other support (including financial*

[83] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1)
[84] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

support) within ten (10) business days, the Appointed Actuary should proceed with the notification to the Board of Directors and the domiciliary commissioner."[85]

There are other situations in which the SAO may need to be revised and reissued. An example of such a situation is a request from a regulator for expanded wording in the SAO. In these situations, the Appointed Actuary may wish to discuss the timing/format/content of the revised SAO with the regulator in consultation and conjunction with the company to which the SAO relates.

Note:

- If an error is discovered between the issuance of the SAO and December 31 of that year, the domiciliary commissioner must be notified.
- According to the NAIC SAO Instructions, "No Appointed Actuary shall be liable in any manner to any person for any statement made in connection with the above paragraphs if such statement is made in a good faith effort to comply with the above paragraphs."[86]

[85] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[86] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

7. Actuarial Opinion Summary

The AOS is identified by the NAIC as a supplemental filing, separate from the Annual Statement and the SAO. NAIC Instructions for preparation of the AOS are provided separately from the SAO Instructions to emphasize the supplemental nature of the AOS filing.

Of particular importance is that the AOS is a confidential document. As stated in the NAIC AOS Instructions,

> *The AOS contains significant proprietary information. It is expected that the AOS be held confidential; it is not intended for public inspection. The AOS should not be filed with the NAIC and should be kept separate from any copy of the Statement of Actuarial Opinion (Actuarial Opinion) in order to maintain confidentiality of the AOS. The AOS can contain a statement that refers to the Actuarial Opinion and the date of that opinion.*[87]

The AOWG Guidance repeats this information and adds

> *The AOS is a confidential document and should be clearly labelled and identified prominently as such.*

We expect the actuary will transmit the AOS to the company department responsible for filing this document by e-mail (with the AOS as an attachment) or by delivery of a hard copy with an attached cover letter or by some similar means. Based on the AOWG Guidance, Appointed Actuaries commonly repeat these instructions in the transmittal e-mail or the cover letter:

- This attached document should not be filed with the NAIC;
- This attached document should be filed with the domiciliary state's regulator; and
- This attached document should not be filed with any other state's regulator, unless specifically requested.

The following provides discussion and illustrative language for consideration when issuing an AOS.

[87] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

7.1 Filing the AOS

This section provides discussion around the filing requirements of the AOS. According to the NAIC AOS Instructions,

> *For all Companies that are required by their domiciliary state to submit a confidential document entitled Actuarial Opinion Summary (AOS), such document shall be filed with the domiciliary state by March 15 (or by a later date otherwise specified by the domiciliary state). This AOS shall be submitted to a non-domiciliary state within fifteen days of request, but no earlier than March 15, provided that the requesting state can demonstrate, through the existence of law or some similar means, that it is able to preserve the confidentiality of the document.*

FAQ: I have completed the Statement of Actuarial Opinion and Actuarial Opinion Summary at the same time and provided them to the Company. Does the Company file them with its domiciliary state insurance department together?

A: No, the SAO and AOS are separate documents. The AOS is not included with the Company's Annual Statement and other documents that are filed with the NAIC due to its confidential nature. The AOWG Regulatory Guidance advises that, in order to avoid confusion, the Appointed Actuary should provide the AOS to company personnel separately from the SAO.

7.1.1 Discussion

The AOS is to be filed with the company's domiciliary state insurance department separately from the Annual Statement and the SAO. The AOS generally must be filed by March 15, unless the state's insurance department has specified a different date. The Appointed Actuary may want to refer to the Academy's 2021 P/C Loss Reserve Law Manual to find the state-specific due date. If requested, the AOS must be submitted to a non-domiciliary state within fifteen days of request, but no earlier than March 15. The requesting state must demonstrate its ability to preserve the confidentiality of the AOS to the Company, in accordance with item 1 of the NAIC AOS Instructions provided in Appendix I.2.

Note:

- The AOS is not included with the company's Annual Statement and other documents filed directly with the NAIC.
- The AOS is filed separately from the SAO, but the wording of the AOS may make reference to the SAO.
- The Appointed Actuary is not required to submit a copy of the SAO with the AOS, since that SAO will have been submitted along with the company's Annual Statement.
- The AOS should be consistent with applicable Actuarial Standards of Practice (ASOPs).
- Exemptions for filing the SAO apply equally to the filing requirements of the AOS.

7.1.2 Illustrative language

Because it is sent separately from the SAO, the Appointed Actuary may wish to consider including some basic information along with the AOS. Sample wording is presented below:

Date: March 13, 2021
Actuarial Opinion Summary

Company:	*THE Insurance Company*
NAIC#:	*####*
Appointed Actuary:	*Janet Actuary*

I have signed the Company's Statement of Actuarial Opinion on Feb. 23, 2021. These two documents are closely linked; the Actuarial Opinion Summary is an extension of the Statement of Actuarial Opinion. Therefore, all limitations, caveats, and reliances in the Statement of Actuarial Opinion should also be applied to the Actuarial Opinion Summary. Moreover, it is my understanding that, consistent with the Annual Statement Instructions, the Actuarial Opinion Summary will be kept confidential by state regulators and is not intended for public inspection, subject to applicable law.

7.2 Content of the AOS

The principal content of the AOS is provided in five items, A through E. The first four items provide figures pertaining to the Appointed Actuary's unpaid claim estimates on both a point and range basis when calculated, the company's carried reserve, and differences between them on both a net and gross of reinsurance basis. In item E the Appointed Actuary is required to state whether the company has experienced one-year adverse development in excess of five percent of the respective prior year-end's policyholders' surplus in three or more of the past five years, and if so, provide explanation for the adverse experience.

This section provides discussion and illustrative language around the content of the AOS, with illustrative language for item E. Following this section are sample AOSs containing illustrations of items A through E (section 7.3).

7.2.1 Definitions

Section 3.7 of ASOP No. 36 states *"The actuary should consider a reserve to be reasonable if it is within a range of estimates that could be produced by an unpaid claim analysis that is, in the actuary's*

professional judgment, consistent with both ASOP No. 43, Property/Casualty Unpaid Claim Estimates, *and the identified stated basis of reserve presentation."*[88]

7.2.2 Discussion

The AOS requires the Appointed Actuary to disclose, on a gross and net basis, the Appointed Actuary's point estimate and/or the Appointed Actuary's range and compare this to the carried reserves.

Items 5 (A) through 5 (D) in the NAIC AOS Instructions clarify that there is no requirement to produce both a range and a point estimate. However, the reserve estimates presented in the AOS must follow the Appointed Actuary's analysis (i.e., if the Appointed Actuary prepares both a point estimate and a range in the analysis, then both the point estimate and the range must be disclosed in the AOS).

If the Appointed Actuary produces a range of estimates for a portion of total liabilities and a point estimate for the remaining liabilities, then the AOS should include both. The Appointed Actuary should show how the point estimate and the range combine to form the Appointed Actuary's SAO, which can be categorized as reasonable, deficient, redundant, qualified, or no opinion. The AOS Exhibit should be consistent with the type of opinion provided in the SAO.

If one-year development has been adverse by at least five percent of the respective prior year's surplus in at least three of the last five calendar years, the AOS also requires explicit discussion of reserve elements and/or management decisions to which such adverse development can be attributed. Each year's one-year development, on a net basis, is compared to the prior period's surplus, and a ratio is developed. The one-year development test is the same calculation as that which underlies the IRIS Ratio regarding One-Year Reserve Development to Surplus. The calculation of the company's one-year reserve development to surplus for each of the prior five years is disclosed in the five-year historical exhibit of the company's Annual Statement.

Note:

- NAIC AOS Instructions *state "the net and gross reserve values reported by the Appointed Actuary in the AOS should reconcile to the corresponding values reported in the Insurer's Annual Statement, the Appointed Actuary's Actuarial Opinion, and the Actuarial Report. If not, the Appointed Actuary shall provide an explanation of the difference."*[89]
- The Appointed Actuary may want to consider potential responses in the AOS section E for consistency with commentary in the SAO on IRIS test exceptional values.

[88] Actuarial Standards Board of the American Academy of Actuaries, "Actuarial Standard of Practice No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves," http://www.actuarialstandardsboard.org/asops/statements-actuarial-opinion-regarding-propertycasualty-loss-loss-adjustment-expense-reserves/, December 2010, page 3.
[89] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

- NAIC SAO Instructions indicate that the Actuarial Report should include detailed descriptions and calculations that support the point estimate and/or range of estimates.

7.2.3 Illustrative language

If, for example, reserve strengthening for A&E was one of the causes for one-year development to exceed five percent of the respective prior year's surplus in at least three of the last five calendar years, then the Appointed Actuary might consider language like the following in item E of the AOS. This language would be in addition to explanations of any other causes of adverse development for those years:

The Company's one-year development exceeded five percent of surplus in three of the five most recent years. During this period, the Company was evaluating its asbestos exposures using a ground up evaluation. These evaluations included input from claims, legal, and actuarial personnel. These evaluations resulted in several increases in the Company's net asbestos liabilities, which in turn resulted in the adverse one-year development in those three prior years.

NAIC AOS Instructions require "*an explicit description of the reserve elements or management's decisions which were the major contributors,*"[90] which may be more detailed than comments in the RELEVANT COMMENTS section of the SAO. Recall, for example, the illustrative language provided in the RELEVANT COMMENTS section pertaining to exceptional values for IRIS Ratios (section 5.5, IRIS Ratios) was as follows:

> *During the past year, the Company strengthened net reserves for prior accident years by $100,000,000. Most of the increase was for asbestos and environmental claims for prior accident years. This extraordinary loss reserve strengthening caused exceptional values for the NAIC IRIS Tests regarding One-Year Reserve Development to Surplus, Two-Year Reserve Development to Surplus, and/or Estimated Current Reserve Deficiency to Surplus.*

If one-year development has been adverse by at least five percent of the respective prior year's surplus in at least three of the last five calendar years, but the Appointed Actuary has not issued the SAO in each of those five years, the Appointed Actuary may wish to begin the required commentary with language such as the following:

[90] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

The Company had one-year adverse development in excess of five percent of the prior year-end's policyholders' surplus in three or more of the last five calendar years. I became the Appointed Actuary on [date] and have issued the Statement of Actuarial Opinion on the Company's loss and loss adjustment expense reserves, beginning with year-end [year]. The Company's management has represented to me that the one-year adverse development in prior years were due to...

OR

The Company had one-year adverse development in excess of five percent of the prior year-end's policyholders' surplus in three or more of the last five calendar years. I became the Appointed Actuary on [date] and have issued the Statement of Actuarial Opinion on the Company's loss and loss adjustment expense reserves, beginning with year-end [year]. I have reviewed the Actuarial Reports for the years prior to my appointment, and I have determined that the one-year adverse development in prior years were due to...

If fewer than three years fail the test, then the Appointed Actuary is not required to comment but may wish to include a sentence such as the following for clarity:

The calculations of one-year development of the Company's reserves yielded results in excess of five percent of prior year-end's policyholders' surplus in only one of the last five years.

7.3 Sample formats of the AOS

Sample formats for the AOS are provided below. These sample formats are intended to be illustrative only, and they may not apply in every situation. The Appointed Actuary is not required to adopt them.

SAMPLE FORMAT FOR THE AOS
[Name] Insurance Company
December 31, 2021

Sample # 1: If the Appointed Actuary provides a range without a point estimate:

		Net Reserves			Gross Reserves		
		Low	Point	High	Low	Point	High
A	Actuary's range of estimates	9,000		11,000	10,000		12,000
B	Actuary's point estimate		NA			NA	
C	Company carried reserves		10,000			11,000	
D	Difference between Company carried and actuary's estimate	1,000		(1,000)	1,000		(1,000)

Sample # 2: If the Appointed Actuary provides a point estimate without a range:

		Net Reserves			Gross Reserves		
		Low	Point	High	Low	Point	High
A	Actuary's range of estimates	NA		NA	NA		NA
B	Actuary's point estimate		10,500			11,600	
C	Company carried reserves		10,000			11,000	
D	Difference between Company carried and actuary's estimate		(500)			(600)	

Sample # 3: If the Appointed Actuary provides both a range and a point estimate:

		Net Reserves			Gross Reserves		
		Low	Point	High	Low	Point	High
A	Actuary's range of estimates	9,000		11,000	10,000		12,000
B	Actuary's point estimate		10,500			11,600	
C	Company carried reserves		10,000			11,000	
D	Difference between Company carried and actuary's estimate	1,000	(500)	(1,000)	1,000	(600)	(1,000)

Sample # 4: If the Appointed Actuary provides a qualified opinion – point estimate without a range:

		Net Reserves			Gross Reserves		
		Low	Point	High	Low	Point	High
A	Actuary's range of estimates	NA		NA	NA		NA
B	Actuary's point estimate		9,500			10,000	
C1	Company carried reserves - TOTAL		10,000			11,000	
C2	Company carried reserves - portion excluded by opinion		1,000			1,600	
C3	Company carried reserves covered by opinion		9,000			9,400	
D	Difference between Company carried and actuary's estimate (C3-B)		(500)			(600)	

Following items A through D in each of the above samples would be item E. The following provides an illustration of item E for the situation where the company has not experienced one-year adverse development by more than five percent of surplus in three or more of the last five calendar years:

E. *The Company has not had one-year adverse development, as measured by Schedule P, Part 2 Summary, in excess of five percent of the prior year-end's policyholders' surplus in three or more of the last five calendar years.*

NAIC AOS instructions indicate that the Appointed Actuary is required to sign and date the Actuarial Opinion Summary. The Appointed Actuary may choose to use a signature similar to the signature line of the Actuarial Opinion. A sample format is shown below.

Signature of Appointed Actuary
Printed name of Appointed Actuary
Employer's name
Address of Appointed Actuary
Telephone number of Appointed Actuary
Email address of Appointed Actuary
Date AOS was rendered

The following are examples of illustrative wording that might be appropriate for including within the AOS to note that the information provided is expected to be kept confidential. See important note below to assist in determining the appropriate language for each situation.

This Actuarial Opinion Summary was prepared solely for the Company for filing with regulatory agencies and is not intended for any other purpose. Furthermore, it is my understanding that, consistent with the Annual Statement Supplemental Filing Instructions, the information provided in this Actuarial Opinion Summary will be kept confidential by those regulatory agencies and will not be made available for public inspection, subject to applicable law.

OR

This Actuarial Opinion Summary was prepared solely for the Company for filing with regulatory agencies and is not intended for any other purpose. Furthermore, it contains information that is a trade secret and therefore, if disclosed, would cause substantial injury to ABC Insurance Company's competitive position. Therefore, I request that this Summary and information contained therein be maintained confidential and I

request an exception from disclosure under the Freedom of Information Act/Laws of your state.

Note:

- Because the confidentiality laws differ from state to state, Appointed Actuaries are encouraged to reference the Academy's 2021 P/C Loss Reserve Law Manual to assist them in identifying differences among the states. Knowledge of and compliance with legal and regulatory requirements rests with the individual actuary. Legal counsel should be consulted where the actuary is unable to identify all relevant legal requirements.

7.4 AOS for pooled companies

According to the NAIC AOS Instructions,

> *The AOS for a pooled Company … shall include a statement that the Company is a xx% pool participant. For a non-0% Company, the information provided for paragraph 5 should be numbers after the Company's share of the pool has been applied; specifically, the point or range comparison should be for each statutory Company and should not be for the pool in total. For any 0% pool participant, the information provided for paragraph 5 should be that of the lead company.*[91]

7.4.1 Discussion

Paragraph 6 of the NAIC AOS Instructions requires the AOS to include the participation percentage for companies participating in an intercompany pooling agreement, as discussed in paragraph 1C of the NAIC SAO Instructions. For those companies whose participation percentage is zero, the information provided in paragraph 5 of the AOS should be that of the lead company.

For those companies whose pooling is other than 0%, AOWG Regulatory Guidance (Appendix II) encourages actuaries to display both the consolidated pool amounts in addition to the statutory entity's amounts. This can be accomplished with two separate tables.

7.4.2 Illustrative language

The following language may be appropriate when a company is a 0% pool participant in an intercompany pooling arrangement:

[91] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

XYZ Insurance Company is a member of an intercompany pooling arrangement, with zero percent participation. The lead company is ABC Insurance Company with an XX% share of the consolidated pool amount. The following information is that of the lead company, ABC Insurance Company.

7.5 Errors in the AOS

If an amended SAO is required that impacts AOS results, filing an amended AOS is also necessary. The 2021 AOWG Regulatory Guidance, included as Appendix II, discusses regulatory expectations in cases where an error is discovered by the Appointed Actuary, the company, or the regulator.

7.5.1 Definitions

According to the NAIC AOS Instructions,

> *"The AOS shall be considered to be in error if the AOS would have not been issued or would have been materially altered had the correct data or other information been used. The AOS shall not be considered to be in error if it would have been materially altered or not issued solely because of data or information concerning events subsequent to the balance sheet date or because actual results differ from those projected."*[92]

7.5.2 Discussion

When an AOS is in error, as defined above, AOWG Regulatory Guidance indicates the revised Summary should

- be submitted to the regulator
- clearly state that it is an amended document
- contain or accompany an explanation for the revision and
- include the date of the revision.

NAIC AOS Instructions added the following language to expand the requirements in the case where an AOS is considered to be in error:

> *"The Insurer required to furnish an AOS shall require its Appointed Actuary to notify its Board of Directors in writing within five (5) business days after any determination by the Appointed Actuary that the AOS submitted to the domiciliary commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect…Notification shall be required when discovery is made between the issuance of the AOS and Dec. 31 of that year. Notification should include a summary of such findings.*

[92] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

If the Appointed Actuary learns that the data or other information relied upon was factually incorrect, but cannot immediately determine what, if any, changes are needed in the AOS, the Appointed Actuary and the Company should quickly undertake procedures necessary for the Appointed Actuary to make such determination. If the Insurer does not provide the necessary data corrections and other support (including financial support) within ten (10) business days, the Appointed Actuary should proceed with the notification to the Board of Directors and the domiciliary commissioner.

An Insurer who is notified pursuant to the preceding paragraphs shall forward a copy of the amended AOS to the domiciliary commissioner within five (5) business days of receipt of such and shall provide the Appointed Actuary making the notification with a copy of the letter and amended AOS submitted to the domiciliary commissioner. If the Appointed Actuary fails to receive such copy within the five (5) business day period referred to in the previous sentence, the Appointed Actuary shall notify the domiciliary commissioner within the next five (5) business days that an amended AOS has been finalized."[93]

Note:

- According to the NAIC AOS Instructions, "No Appointed Actuary shall be liable in any manner to any person for any statement made in connection with the above paragraphs if such statement is made in a good faith effort to comply with the above paragraphs."[94]

[93] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).
[94] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.2).

8. Actuarial Report

This chapter provides discussion related to the Actuarial Report and underlying actuarial work papers supporting an SAO. The NAIC Instructions include specific requirements for the technical component of the Actuarial Report and various disclosures, as discussed within this chapter. These requirements are in addition to following documentation and disclosure requirements of ASOP No. 41, *Actuarial Communications*, in particular section 3.2:

> *An actuarial report may comprise one or several documents. The report may be in several different formats (such as formal documents produced on word processing, presentation or publishing software, e-mail, paper, or web sites). Where an actuarial report for a specific intended user comprises multiple documents, the actuary should communicate which documents comprise the report.*
>
> *In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary with sufficient clarity that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report.*[95]

8.1 Actuarial Report requirements per the NAIC SAO Instructions

According to the NAIC SAO Instructions,

> *The Actuarial Opinion must include assurance that an Actuarial Report and underlying actuarial workpapers supporting the Actuarial Opinion will be maintained at the Company and available for regulatory examination for seven (7) years. The Actuarial Report contains significant proprietary information. It is expected that the Actuarial Report be held confidential and not be intended for public inspection….*
>
> *The technical component must show the analysis from the basic data (e.g., loss triangles) to the conclusions.*[96]

The NAIC SAO Instructions go on to include a discussion on long-term care and A&H Long Duration Contracts as well as provide a list of six bulleted items Actuarial Reports must also include. The long-term care and A&H Long Duration Contracts are discussed in section 8.2 while the six bulleted items in the NAIC SAO Instructions correspond to sections 8.3 to 8.8 of this chapter, respectively.

[95] Actuarial Standards Board, "ASOP No. 41, *Actuarial Communications*," http://www.actuarialstandardsboard.org/asops/actuarial-communications/, December 2010, section 3.2.
[96] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

8.1.1 Definitions

According to the NAIC SAO Instructions,

> *"Actuarial Report" means a document or other presentation, prepared as a formal means of conveying to the state regulatory authority and the Board of Directors the Appointed Actuary's professional conclusions and recommendations, of recording and communicating the methods and procedures, of assuring that the parties addressed are aware of the significance of the Appointed Actuary's opinion or findings and of documenting the analysis underlying the opinion.*[97]

8.1.2 Discussion

The requirements for the Actuarial Report per the NAIC SAO Instructions are much more specific than those contained in ASOP No. 41. The NAIC SAO Instructions require the Actuarial Report show the analysis from the basic data to the conclusions, and contain six additional listed items (these are discussed in more detail in sections 8.3 through 8.8). Additionally, the NAIC SAO Instructions require that the reconciliation papers in section 3.7.1 (*Reconciliation to Schedule P, Discussion*) become a part of the report.

FAQ: What is the due date of the Actuarial Report supporting an SAO?

A: According to NAIC SAO Instructions, Actuarial Reports "…must be available by May 1 of the year following the year-end for which the Opinion was rendered or within two (2) weeks after a request from an individual state commissioner." However, requirements may vary by state. For example, Colorado requires the Actuarial Report to be issued within 30 days of the Actuarial Opinion if the carried reserves are less than the Appointed Actuary's best estimate (Statute Title 10, 3-1-3 § 6).

The Appointed Actuary is encouraged to refer to the Academy's 2021 P/C Loss Reserve Law Manual and relevant statutes for specific guidance.

The definition of the Actuarial Report in paragraph 7 of the NAIC SAO Instructions includes a company's Board of Directors as part of the intended audience to be consistent with paragraph 1, which states that the Actuarial Report should be made available to the Board. This clarification is not intended to change the content of the Actuarial Report as described in paragraph 7. The Appointed Actuary may still elect to present findings to the board in any suitable manner (for example, an oral report or executive summary). In this event, the full Actuarial Report as defined in paragraph 7 must still be made available to the board upon request. The NAIC SAO Instructions further state that the minutes of the Board of Directors' meeting should indicate that a presentation was made. The NAIC SAO Instructions further state that the minutes should identify the form of presentation (e.g., webinar, in-person, written) in the minutes.

The Appointed Actuary usually includes within the Actuarial Report commentary on all material items covered in the SAO, including some detail on how the materiality threshold was chosen and commentary on what items were considered in choosing the threshold. In addition, regulators further expect the Actuarial Report to address the risk

[97] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

factors identified in the SAO, with descriptions of alternate outcomes that could result in adverse development in excess of the materiality threshold.

According to the NAIC SAO Instructions for year-end 2021 the Actuarial Report should conclude with the signature of the Appointed Actuary and the date when the Actuarial Report was finalized in a format consistent with what is required on the SAO.

_____
Signature of Appointed Actuary
Printed name of Appointed Actuary
Employer's name
Address of Appointed Actuary
Telephone number of Appointed Actuary
Email address of Appointed Actuary
Date report was issued

The 2021 AOWG Regulatory Guidance supplements the NAIC SAO Instructions with regulatory expectations on Actuarial Reports.

Note:

- The Appointed Actuary should consider the requirements of the NAIC SAO Instructions and ASOP No. 41 when developing the Actuarial Report, as well as guidance provided by the AOWG (see 2021 AOWG Regulatory Guidance).
- The Actuarial Report and the AOS show company carried reserves along with the Appointed Actuary's estimate(s). Exhibit A of the SAO and the company's Annual Statement show the company carried reserves. Reconciliation of the net and gross reserve figures among these various related documents is expected to be a straightforward process. Exceptions should be noted and explained in the Actuarial Report.

8.2 Long-Term Care and A&H Long Duration Contracts

The NAIC SAO Instructions reference Actuarial Guideline LI related to certain long-term care contracts:

> *Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51) in the NAIC Accounting Practices and Procedures Manual requires a company with over 10,000 in force lives covered by long-term care (LTC) insurance contracts as of the valuation date to perform a stand-alone asset adequacy analysis for its in force long-term care (LTC) contracts. The Actuarial Report and workpapers summarizing the results, assumptions and testing procedures for the asset adequacy testing of LTC business must be in compliance with AG*

51 requirements. When referring to AG 51, the term "Actuarial Memorandum" is synonymous with Actuarial Report and workpapers.[98]

In addition, the NAIC SAO Instructions include the following requirement of Actuarial Reports:

> *Actuarial Report should contain disclosure of all reserve amounts associated with A&H Long Duration Contracts reported by the Company; the reserve amounts in the Actuarial Report should tie to the Annual Statement.*[99]

8.3 Description of Appointed Actuary's relationship to the Company

The NAIC SAO Instructions include the following requirement of Actuarial Reports:

> *A description of the Appointed Actuary's relationship to the Company, with clear presentation of the Actuary's role in advising the Board and/or management regarding the carried reserves. The Actuarial Report should identify how and when the Appointed Actuary presents the analysis to the Board and, where applicable, to the officer(s) of the Company responsible for determining the carried reserves.* [100]

8.3.1 Discussion

The Appointed Actuary is required to include in the Actuarial Report a clear description of the Appointed Actuary's role in advising the board and/or management regarding the carried reserves, including a disclosure of how and when the actuarial analysis is presented to the board and/or management.

8.3.2 Illustrative language

The following sample wording is provided to illustrate the level of detail and nature of information typically intended to be included in the Report to fulfill each element of this requirement. Please note that these examples are not meant to represent all potential situations.

The Appointed Actuary's relationship to the Company:

- *I am the Chief Actuary of the Company.*
- *[Alternative] I am an independent consultant to the Company.*

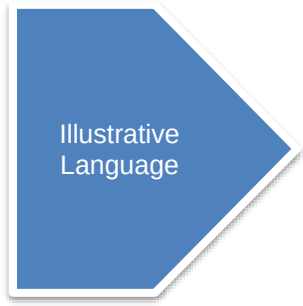
[98] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[99] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[100] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

- *[Alternative] I am an independent consultant retained by the insurance department.*

The Appointed Actuary's role in advising the board and/or management:

- *I provide input to management and the board of directors in the reserve setting process.*
- *[Addition] I establish a range of reasonable reserve estimates and understand that Company management selects the carried reserves based on my range of reasonable reserve estimates.*
- *[Alternative or Addition] My role is to evaluate the reasonableness of the carried reserves. I do not explicitly advise management or the board of directors in the reserve setting process.*

How and when the Appointed Actuary presents the analysis to the board:



- *The Appointed Actuary is required to present to the Board of Directors on ABC's carried reserves. This report constitutes this presentation, and the minutes of ABC's Board of Directors should indicate that the report was made available to the Board.*
- *[Alternative] A summary of the findings of my analysis was/will be presented to the Board of Directors on (Date).*

8.4 Exhibit comparing Appointed Actuary's conclusions to carried amounts in Annual Statement

The NAIC SAO Instructions include the following requirement of Actuarial Reports:

> *"An exhibit that ties to the Annual Statement and compares the Appointed Actuary's conclusions to the carried amounts consistent with the segmentation of exposure or liability groupings used in the analysis. The Appointed Actuary's conclusions include the Appointed Actuary's point estimate(s), range(s) of reasonable estimates or both."*[101]

[101] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

8.4.1 Discussion

The NAIC SAO Instructions require the Actuarial Report to include an exhibit that ties to the Annual Statement and compares the Appointed Actuary's conclusions to the carried amounts. This exhibit is to be consistent with the segmentation used in the Appointed Actuary's analysis, and conclusions must include the Appointed Actuary's point estimate(s), range(s) of reasonable estimates, or both.

Further, AOWG guidance includes additional commentary based on the regulator's interpretation of the requirement:

> *"The Actuarial Opinion Summary already provides this information at the highest level of aggregation; this information should still be presented in the Actuarial Report…* [The Actuarial Report is] *intended to capture the comparisons at a more detailed level consistent with how the reserves were analyzed, to the extent these comparisons are possible."*[102]

8.4.2 Illustrative language

An exhibit similar to the below may be appropriate:

Analysis Segment	Actuary Estimated	Actuarial Report Exhibit	Company Carried	Source of Company Carried	Difference
	(1)	*(2)*	*(3)*	*(4)*	*(5) = (3) - (1)*
Homeowners	$XX,XXX	Exhibit B	$YY,YYY	Schedule P, Part 1A	$ZZ,ZZZ
Private Passenger Auto	XXX,XXX	Exhibit C	YYY,YYY	Schedule P, Part 1B	ZZZ,ZZZ
All Other LOB - State A	X,XXX	Exhibit D	Y,YYY	Company workpaper	Z,ZZZ
All Other LOB - All Other States	X,XXX	Exhibit E	Y,YYY	Company workpaper	Z,ZZZ
Total	$XXX,XXX	Exhibit A	$YYY,YYY	AS, Page 3	$ZZZ,ZZZ

8.5 Reconciling and mapping data in the Actuarial Report to Schedule P

The NAIC SAO Instructions include the following requirement of Actuarial Reports:

> *"An exhibit that reconciles and maps the data used by the Appointed Actuary, consistent with the segmentation of exposure or liability groupings used in the Appointed Actuary's analysis, to the Annual Statement Schedule P line of business reporting. An explanation should be provided for any material differences."*[103]

[102] 2021 AOWG Regulatory Guidance (Appendix II).
[103] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

8.5.1 Discussion

The Schedule P reconciliation is intended to be consistent with the segmentation used in the Appointed Actuary's analysis.

The 2021 AOWG Regulatory Guidance provides extended commentary on the topic that the Appointed Actuary may wish to consider. The intent of the Schedule P reconciliation is to clearly demonstrate to a regulator or other user of the Actuarial Report how the actuarial data shown in the Schedule P reconciliation is mapped in the supporting actuarial analysis prior to reconciliation of that data to Schedule P. Detailed reconciliations of the data "… is generally expected to be on the same level as used in the analysis underlying the Actuarial Opinion…" The AOWG Regulatory Guidance goes on to state that, if the reconciliation cannot be performed, the reasons should be noted in the Report.

According to AOWG Regulatory Guidance, all data elements material to the analysis should be included in the reconciliation:

> *"The Appointed Actuary should reconcile all data material to the analysis, including claim counts and earned premium if appropriate. If the Appointed Actuary chooses not to reconcile certain data elements used in their analysis, such as claim counts, a brief explanation should be included in the Actuarial Report to make it clear that these elements were not inadvertently overlooked."*[104]

There are nuances that the Appointed Actuary may decide to take into consideration with respect to the Schedule P reconciliation. For example,

- The 2021 AOWG Regulatory Guidance specifies a number of circumstances such as "mergers, acquisitions, changes in claim systems, and the use of underwriting year data in the analysis"[105] that present challenges to Appointed Actuaries, and "encourages Appointed Actuaries to disclose reconciliation issues in the Actuarial Report."[106]

- The 2021 AOWG guidance also encourages Appointed Actuaries to consider whether a calendar year reconciliation of total paid losses (all accident years combined) "provides sufficient assurance of the integrity of the data used in the analysis…"[107]

- COPLFR further recognizes there may be issues in the way in which claims are counted (e.g., per claim versus per occurrence, the availability of assumed claim counts, etc.) and notes that there is no requirement to audit the claim counts presented in Schedule P.

The NAIC SAO Instructions are explicit that material differences arising from the Schedule P reconciliation must be explained by the Appointed Actuary.

[104] 2021 AOWG Regulatory Guidance (Appendix II).
[105] 2021 AOWG Regulatory Guidance (Appendix II).
[106] 2021 AOWG Regulatory Guidance (Appendix II).
[107] 2021 AOWG Regulatory Guidance (Appendix II).

For further discussion, please see Chapter 3 and the AOWG Regulatory Guidance.

Note:

- The mapping between analysis segments and Schedule P lines of business may also be used for the comparison of Actuary's conclusions to the carried amounts as discussed in section 8.4.
- AOWG Regulatory Guidance highlights the relationship between the reconciliation performed by the Appointed Actuary of the actuarial data to that shown in Schedule P, and that performed by the independent auditors, focused on the consistency between Schedule P and the data in the company's claims system.

8.6 Exhibit and discussion on change in Appointed Actuary's estimates

In addition to comparing estimates and reconciling data to the company's Annual Statement, the NAIC SAO Instructions also include a requirement to compare the Actuary's estimates to the prior Actuarial Report:

> *An exhibit or appendix showing the change in the Appointed Actuary's estimates from the prior Actuarial Report, including extended discussion of factors underlying any material changes. The exhibit or appendix should illustrate the changes on a net basis, but should also include the changes on a gross basis, if relevant. If the Appointed Actuary is newly-appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this.*[108]

8.6.1 Discussion

The NAIC SAO Instructions require the Appointed Actuary to include in the Actuarial Report an exhibit that summarizes changes in the Appointed Actuary's estimates from the prior analysis, with extended discussion of significant factors underlying the changes. These requirements seem to be intended to apply to the change in the Appointed Actuary's prior period estimates since the previous Actuarial Report. This exhibit or appendix is to show the change in the Appointed Actuary's estimates, not the company's.

The requirement was clarified in the year-end 2016 NAIC SAO Instructions to include illustration of the changes on a net basis, and on a gross basis if relevant.

[108] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

NAIC SAO Instructions require discussion of significant changes. The level of detail used to describe the significant factors underlying material changes in estimates is left to the discretion of the Appointed Actuary. The AOWG Regulatory Guidance suggests that an explanation be provided for any significant fluctuations in estimates among accident years or segments, or possibly in even more granular detail. Further, the amount of change that constitutes a significant amount is left to the Appointed Actuary's judgment. *"Significant"* in this context would typically be lower than the materiality standard used in consideration of the risk of material adverse deviation in the SAO.

FAQ: My analysis of the Company includes interim reserve evaluations in addition to the analysis supporting the SAO. What should be included in the exhibit showing the change in actuary's estimates?

A: While a comparison to interim analysis estimates may be instructive, the requirement is for the change in estimates and relevant discussion be relative to the Actuarial Report that supported the prior SAO.

To meet the requirements of this part of the NAIC SAO Instructions, and in accordance with the spirit in which COPLFR believes these Instructions are intended, the Appointed Actuary may wish to consider including the following in the Actuarial Report (gross and net of reinsurance):

1) Exhibit(s) and discussion related to significant changes in point estimates from the prior Actuarial Report (if a point estimate is included in the Actuarial Report), categorized by reviewed segment, accident year, and in total.

2) Exhibit(s) and discussion related to significant changes in the range of estimates from the prior year (if a range is included in the Actuarial Report), if meaningful and practical, including discussion of any significant expansion or contraction of the range relative to the prior Actuarial Report.

When there is a change in Appointed Actuary, the new Appointed Actuary is encouraged to discuss material changes in estimates in the Report, to the extent that it is reasonably possible to do so. If no such comparison is practical or meaningful, the Appointed Actuary should make a disclosure consistent with that reported in the SAO.

Note:

- If the Appointed Actuary estimated ultimate amounts (losses and/or LAE) in the previous Actuarial Report, then, in this Actuarial Report, the change in estimates would be calculated as the change in estimated ultimate amounts, for prior periods. If the Appointed Actuary estimated reserves directly in the previous Actuarial Report (e.g., because of the specific methodology used or because a complete history of paid losses was not available), then the change in estimates would be calculated as the incremental paid amounts plus the change in the estimated unpaid amounts between Actuarial Reports, again for prior periods.

8.7 Extended comments on risks and uncertainties

The NAIC SAO Instructions also include a requirement for the Actuary to expand on certain items that are included in the SAO:

> *Extended comments on trends that indicate the presence or absence of risks and uncertainties that could result in material adverse deviation.* [109]

8.7.1 Discussion

As noted in the NAIC SAO Instructions, the Actuarial Report is expected to be held confidential and not intended for public inspection. Thus, the extended comments about risks and uncertainties may include details that may not be in the public domain. At a minimum, the Actuarial Report should support the Actuary's conclusion about whether RMAD exists and this often will require more detail than is included in the SAO.

Extended comments could include additional discussion on the major factors discussed in the SAO and how they are (or are not) applicable to the company, how the risk factors could lead to adverse deviation in excess of the materiality threshold (a sensitivity analysis for example), or any other commentary or analyses that the Actuary believes would be helpful to the company and/or the Regulator in support of the conclusion about the existence of RMADs.

FAQ: Is this still a requirement if the Opinion states there are not significant risks that could result in material adverse deviation?

A: Yes. Section 4.1.3d of ASOP 41 states that the actuary should disclose "any cautions about risks and uncertainty" in any actuarial report, unless the actuary determines it is inappropriate to do so. In addition, the 2020 NAIC SAO Instructions state that a discussion of risk factors is to be included in the SAO even when the actuary concludes there is no material risk of adverse deviation, and this requirement would similarly extend to the Actuarial Report.

Note:

- Despite the NAIC SAO Instructions requiring "Extended comments on trends that indicate the presence or absence of risks and uncertainties that could result in material adverse deviation,"[110] the Appointed Actuary may wish to comment on sources of risk and uncertainty that are not trends, such as significant, one-time events.

[109] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[110] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

8.8 Extended comments on unusual values for IRIS Ratio 11, 12, and/or 13

The NAIC SAO Instructions also include a requirement for the Actuary to include additional discussion in the Actuarial Report if the company triggers an unusual result on one of the reserve-based IRIS Ratios:

> *Extended comments on factors that led to unusual IRIS ratios for One-Year Reserve Development to Policyholders' Surplus, Two-Year Reserve Development to Policyholders' Surplus, or Estimated Current Reserve Deficiency to Policyholders' Surplus, and how these factors were addressed in prior and current analyses.* [111]

8.8.1 Discussion

As noted in the NAIC SAO Instructions, the Actuarial Report is expected to be held confidential and not intended for public inspection. Thus, the extended comments may include detail such as operational details or information on specific claims that may not be appropriate for the SAO document, which rests in the public domain. The Actuary may wish to further provide sensitivity analyses and/or exhibits supporting the expanded discussion on this topic.

[111] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

9. Resources

This chapter provides a listing of the ASOPs and SSAPs that apply to the material covered by this practice note. It also provides resources to actuaries providing opinions other than those covered by the scope of this practice note.

9.1 Applicable ASOPs

> *ASOPs are binding on members of the U.S.-based actuarial organizations when rendering actuarial services in the U.S. While these ASOPs are binding, they are not the only considerations that affect an actuary's work. Other considerations may include legal and regulatory requirements, professional requirements promulgated by employers or actuarial organizations, evolving actuarial practice, and the actuary's own professional judgment informed by the nature of the engagement. The ASOPs provide a basic framework that is intended to accommodate these additional considerations.*[112]

According to the ASB, the ASOPs *"identify what the actuary should consider, document, and disclose when performing an actuarial assignment."*[113]

While all ASOPs are binding, the following are specifically cited or referenced within this Practice Note:

ASOP No. 1, *Introductory Actuarial Standard of Practice*

ASOP No. 20, *Discounting of Property/Casualty Unpaid Claim Estimates*

ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Audits, Financial Reviews, and Financial Examinations*

ASOP No. 23, *Data Quality*

ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*

ASOP No. 41, *Actuarial Communications*

ASOP No. 43, *Property/Casualty Unpaid Claim Estimates*

ASOP No. 56, *Modeling*

The above can be found at the ASB website: http://www.actuarialstandardsboard.org/

[112] Actuarial Standards Board, ASOP No. 1, *Introductory Actuarial Standard of Practice*, http://www.actuarialstandardsboard.org/asops/introductoryactuarialstandardpractice/, Section 1.
[113] Actuarial Standards Board, ASOP No. 1, section 1

9.2 Applicable SSAPs

According to the NAIC,

> *The Statutory Accounting Principles (E) Working Group is responsible for developing and adopting substantive, nonsubstantive and interpretation revisions to the NAIC Accounting Practices and Procedures Manual (AP&P Manual). The AP&P Manual provides the basis for insurers to prepare financial statements for financial regulation purposes. Substantive statutory accounting revisions introduce original or modified accounting principles.*
>
> *…*
>
> *SSAPs are considered the highest authority (Level 1) in the statutory accounting hierarchy.*[114]

There are over 100 SSAPs and they are published in the NAIC's *Accounting Practices and Procedures Manual*, available for sale from the NAIC at https://www.naic.org/prod_serv_publications_for_sale.htm#app_manual. COPLFR has received permission to reproduce SSAPs deemed to be particularly applicable to actuaries signing NAIC P&C SAOs per a COPLFR review. We have included these in Appendix IV of this practice note. These SSAPs are as follows:

SSAP 5R: *Liabilities, Contingencies and Impairment of Assets*

SSAP 9: *Subsequent Events*

SSAP 29: *Prepaid Expenses*

SSAP 53: *Property Casualty Contracts - Premiums*

SSAP 55: *Unpaid Claims, Losses and Loss Adjustment Expenses*

SSAP 57: *Title Insurance*

SSAP 58: *Mortgage Guaranty Insurance*

SSAP 62R: *Property and Casualty Reinsurance*

SSAP 63: *Underwriting Pools and Associations Including Intercompany Pools*

SSAP 65: *Property and Casualty Contracts*

SSAP 66: *Retrospectively Rated Contracts*

The NAIC adopted codification of statutory accounting principles effective January 1, 2001 to serve as a common set of principles for individual states to follow. The SSAPs promote consistency and ease regulatory burden. However, individual state regulation is still permissible, and individual states may have specific statutes or regulations that supersede SSAPs. The NAIC publishes a summary of state differences available free of charge online at https://content.naic.org/sites/default/files/publication-spd-ops-prescribed-differences-accounting.pdf.

[114] https://www.naic.org/cmte_e_app_sapwg.htm

Note that the SSAPs are subject to change every year and have seen numerous changes since they were originally issued in 2001.

9.3 Available resources for opinions not covered by this practice note

As noted in the Introduction to this document,

> *This practice note is intended to assist actuaries by describing practices that COPLFR believes are commonly employed in issuing SAOs and AOSs on loss and loss adjustment expense (LAE) reserves in compliance with the Property and Casualty Annual Statement Instructions (Annual Statement Instructions) for 2021 issued by the NAIC. Actuaries may also find this information useful in preparing statements of actuarial opinion for other audiences or regulators.*

While P&C actuaries may also find the information contained in this practice note useful in preparing statements of actuarial opinion for other audiences or regulators (other than in accordance with the NAIC SAO Instructions), there are other resources available. Generally, actuaries will look to the regulatory authority for specific requirements pertaining to the type of opinion being prepared. These requirements are often found on the website of the regulatory authority. The Academy's 2021 P/C Loss Reserve Law Manual may also provide information on these points. Some examples include:

Type of opinion	Regulatory authority	Website
Bermuda opinion of the Loss Reserve Specialist	Bermuda Monetary Authority	http://www.bma.bm/SitePages/Home.aspx
Cayman captive Statement of Actuarial Opinion	Cayman Islands Monetary Authority	https://www.cima.ky/
Hawaii captive Statement of Actuarial Opinion	State of Hawai'i Insurance Division, Department of Commerce & Consumer Affairs	http://cca.hawaii.gov/captive/
Vermont captive Statement of Actuarial Opinion	Vermont Department of Financial Regulation	https://dfr.vermont.gov/document/vermont-captive-annual-report-vcar-general-instructions

The Appointed Actuary may wish to contact the regulatory authority directly to obtain the specific opinion requirements.

APPENDICES

I. 2021 NAIC SAO Instructions

This appendix to the practice note provides the 2021 NAIC SAO Instructions with respect to the P&C SAO (Appendix I.1) and AOS (Appendix I.2). The NAIC Instructions for Title Insurance SAOs (Appendix I.3) are also included for informational purposes only. Appendix 1.4 provides the 2021 NAIC Annual Statement Instructions section on Annual Audited Financial Reports, including auditor data testing requirements. No discussion is included.

I.1 2021 NAIC Property and Casualty SAO Instructions

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ACTUARIAL OPINION

1. There is to be included with or attached to Page 1 of the Annual Statement the statement of the Appointed Actuary, entitled "Statement of Actuarial Opinion" (Actuarial Opinion), setting forth his or her opinion relating to reserves specified in the SCOPE paragraph. The Actuarial Opinion, both the narrative and required Exhibits, shall be in the format of and contain the information required by this section of the *Annual Statement Instructions – Property and Casualty*.

   Upon initial engagement, the Appointed Actuary must be appointed by the Board of Directors by Dec. 31 of the calendar year for which the opinion is rendered. The Company shall notify the domiciliary commissioner within five business days of the initial appointment with the following information:

   a. Name and title (and, in the case of a consulting actuary, the name of the firm).

   b. Manner of appointment of the Appointed Actuary (e.g., who made the appointment and when).

   c. A statement that the person meets the requirements of a Qualified Actuary (or was approved by the domiciliary commissioner) and that documentation was provided to the Board of Directors.

   Once this notification is furnished, no further notice is required with respect to this person unless the Board of Directors takes action to no longer appoint or retain the actuary or the actuary no longer meets the requirements of a Qualified Actuary.

   If subject to the *U.S. Qualification Standards*, the Appointed Actuary shall annually attest to having met the continuing education requirements under Section 3 of the *U.S. Qualification Standards* for issuing Actuarial Opinions. As agreed with the actuarial organizations, the Casualty Actuarial Society (CAS) and Society of Actuaries (SOA) will determine the process for receiving the attestations for their respective members and make available the attestations to the public. An Appointed Actuary subject to the *U.S. Qualification Standards* and not a member of the CAS or SOA shall select one of the above organizations to submit their attestation.

   In accordance with the CAS and SOA's continuing education review procedures, an Appointed Actuary who is subject to the *U.S. Qualification Standards* and selected for review shall submit a log of their continuing education in a form determined by the CAS and SOA. The log shall include categorization of continuing education approved for use by the Casualty Actuarial and Statistical Task Force. As agreed with the actuarial organizations, the CAS and SOA will provide an annual consolidated report to the NAIC identifying the types and subject matter of continuing education being obtained by Appointed Actuaries. An Appointed Actuary subject to the *U.S. Qualification Standards* and not a member of the CAS or SOA shall follow the review procedures for the organization in which they submitted their attestation.

   The Appointed Actuary shall provide to the Board of Directors qualification documentation on occasion of their appointment, and on an annual basis thereafter, directly or through company management. The documentation should include brief biographical information and a description of how the definition of "Qualified Actuary" is met or expected to be met (in the case of continuing education) for that year. The documentation should describe the Appointed Actuary's responsible experience relevant to the subject of the Actuarial Opinion. The Board of Directors shall document the company's review of those materials and any other information they may deem relevant, including information that may be requested directly from the Appointed Actuary. The qualification documentation shall be considered workpapers and be available for inspection upon regulator request or during a financial examination.

If an actuary who was the Appointed Actuary for the immediately preceding filed Actuarial Opinion is replaced by an action of the Board of Directors, the Insurer shall within five (5) business days notify the Insurance Department of the state of domicile of this event. The Insurer shall also furnish the domiciliary commissioner with a separate letter within ten (10) business days of the above notification stating whether in the twenty-four (24) months preceding such event there were any disagreements with the former Appointed Actuary regarding the content of the opinion on matters of the risk of material adverse deviation, required disclosures, scope, procedures, type of opinion issued, substantive wording of the opinion or data quality. The disagreements required to be reported in response to this paragraph include both those resolved to the former Appointed Actuary's satisfaction and those not resolved to the former Appointed Actuary's satisfaction. The letter should include a description of the disagreement and the nature of its resolution (or that it was not resolved). Within this same ten (10) business days, the Insurer shall in writing also request such former Appointed Actuary to furnish a letter addressed to the Insurer stating whether the Appointed Actuary agrees with the statements contained in the Insurer's letter and, if not, stating the reasons for which he or she does not agree. The former Appointed Actuary shall provide a written response to the insurer within ten (10) business days of such request, and the Insurer shall furnish such responsive letter from the former Appointed Actuary to the domiciliary commissioner together with its own responses.

The Appointed Actuary must report to the Board of Directors each year on the items within the scope of the Actuarial Opinion. The Actuarial Opinion and the Actuarial Report must be made available to the Board of Directors. The minutes of the Board of Directors should indicate that the Appointed Actuary has presented such information to the Board of Directors and identify the manner of presentation (e.g., webinar, in-person presentation, written). A separate Actuarial Opinion is required for each company filing an Annual Statement. When there is an affiliated company pooling arrangement, one Actuarial Report for the aggregate pool is sufficient, but there must be addendums to the Actuarial Report to cover non-pooled reserves for individual companies.

The Actuarial Opinion and the supporting Actuarial Report and workpapers should be consistent with the appropriate Actuarial Standards of Practice (ASOPs), including, but not limited to, ASOP No. 23, ASOP No. 36, ASOP No. 41 and ASOP No. 43, as promulgated by the Actuarial Standards Board.

1A. Definitions

"Appointed Actuary" is a Qualified Actuary (or individual otherwise approved by the domiciliary commissioner) appointed by the Board of Directors in accordance with Section 1 of these instructions.

"Board of Directors" can include the designated Board of Directors, its equivalent or an appropriate committee directly reporting to the Board of Directors.

"Qualified Actuary" is a person who:

(i) Meets the basic education, experience and continuing education requirements of the Specific Qualification Standard for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement, as set forth in the *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States (U.S. Qualifications Standards)*, promulgated by the American Academy of Actuaries (Academy):

(ii) Has obtained and maintains an Accepted Actuarial Designation; and

(iii) Is a member of a professional actuarial association that requires adherence to the same *Code of Professional Conduct* promulgated by the Academy, requires adherence to the *U.S. Qualification Standards*, and participates in the Actuarial Board for Counseling and Discipline when its members are practicing in the U.S.

An exception to parts (i) and (ii) of this definition would be an actuary evaluated by the Academy's Casualty Practice Council and determined to be a Qualified Actuary for particular lines of business and business activities.

"Accepted Actuarial Designation" in item (ii) of the definition of a Qualified Actuary, is an actuarial designation accepted as meeting or exceeding the NAIC's Minimum Property/Casualty (P/C) Actuarial Educational Standards for a P/C Appointed Actuary (published on the NAIC website). The following actuarial designations, with any noted conditions, are accepted as meeting or exceeding basic education minimum standards:

(i) Fellow of the CAS (FCAS) – Condition: basic education must include Exam 6 – Regulation and Financial Reporting (United States);

(ii) Associate of the CAS (ACAS) – Conditions: basic education must include Exam 6 – Regulation and Financial Reporting (United States) and Exam 7 – Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management;

(iii) Fellow of the SOA (FSA) – Conditions: basic education must include completion of the general insurance track, including the following optional exams: the United States' version of the Financial and Regulatory Environment Exam and the Advanced Topics in General Insurance Exam.

The table below provides some allowable exam substitutions for (i), (ii) and (iii) in the definition of "Accepted Actuarial Designation:" Noting that CAS exams have changed over time, exceptions for (i) and (ii) provide for FCAS/ACAS designations achieved before an exam was created (e.g. CAS Exam 6-US) or with an earlier version of an exam or exam topic (e.g., 2010 CAS Exam 6 instead of the current CAS Exam 7 Section A). FCAS/ACAS qualified under the 2018 and prior Statement of Actuarial Opinion instructions can use the noted substitution rules to achieve qualification under the new instructions by demonstrating basic and/or continuing education of the required topics including material in CAS Exam 6 (US) and section A of CAS Exam 7 (in the May 2019 CAS syllabus). Exceptions for (iii) for an FSA are also included in the table. The SOA exams completed in the general insurance track in 2019 and prior should be supplemented with continuing education and experience to meet basic education requirements in the *U.S. Qualification Standards.* For purpose of these instructions only, the table also includes specific exams from other organizations that are accepted as substitutes.

Exception for (i), (ii), or (iii)	Exam:	Exam Substitution Allowed*
(i) and (ii)	CAS Exam 6 (US)	1. Any CAS version of a U.S. P/C statutory accounting and regulation exam administered prior to creation of the CAS Exam 6 (US) in 2011. 2. An FCAS or ACAS earned prior to 2021 who did not pass CAS Exam 6 (US) or an allowable exam substitution, may substitute experience and/or continuing education for CAS Exam 6 (US) provided the Appointed Actuary explains in his/her qualification documentation how knowledge of U.S. financial reporting and regulation was obtained. 3. SOA FREU (US) Exam
(ii)	CAS Exam 7	1. Any CAS version of an exam including advanced P/C reserving administered prior to creation of Exam 7 in 2011. 2. An ACAS earned prior to 2021 who did not pass CAS Exam 7 or an allowable exam substitution, may substitute experience and/or continuing education for CAS Exam 7 provided the Appointed Actuary explains in his/her qualification documentation how knowledge of the additional reserving topics in CAS Exam 7 (Section A) in the May 2019 syllabus was obtained. 3. SOA Advanced Topics Exam (Note: The ERM portion of Exam 7 is not needed to meet NAIC educational standards, therefore SOA ERM Exam is not needed for the substitution for this purpose.)
(iii)	SOA FREU (US) Exam	1. CAS Exam 6 (US) 2. Any CAS version of a U.S. statutory accounting and regulation exam administered prior to creation of the CAS Exam 6 in 2011.
(iii)	SOA Advanced Topics Exam	1. CAS Exam 7 2. Any CAS version of an exam containing the advanced techniques to estimate policy liabilities (i.e., advanced reserving).
*Note: These exam substitutions only apply to these instructions and are not applicable for CAS or SOA exam waivers.		

"Insurer" or "Company" means an insurer or reinsurer authorized to write property and/or casualty insurance under the laws of any state and who files on the Property and Casualty Blank.

"Actuarial Report" means a document or other presentation prepared as a formal means of conveying to the state regulatory authority and the Board of Directors the Appointed Actuary's professional conclusions and recommendations of recording and communicating the methods and procedures, of assuring that the parties addressed are aware of the significance of the Appointed Actuary's opinion or findings, and of documenting the analysis underlying the opinion. The required content of the Actuarial Report is further described in paragraph 7. (Note that the inclusion of the Board of Directors as part of the intended audience for the Actuarial Report does not change the content of the Actuarial Report as described in paragraph 7. The Appointed Actuary should present findings to the Board of Directors in a manner deemed suitable for such audience.)

"Property and Casualty (P&C) Long Duration Contracts" refers to contracts (excluding financial guaranty contracts, mortgage guaranty contracts and surety contracts) that fulfill both of the following conditions: (1) the contract term is greater than or equal to 13 months; and (2) the insurer can neither cancel the contract nor increase the premium during the contract term. These contracts are subject to the three tests of *SSAP No. 65—Property and Casualty Contracts* of the NAIC *Accounting Practices and Procedures Manual*.

"Accident and Health (A&H) Long Duration Contracts" refers to A&H contracts in which the contract term is greater than or equal to 13 months and contract reserves are required. See Schedule H instructions for a description of categories of contract reserves, as well as policy features that give rise to contract reserves. Two specific examples of contracts that typically require contract reserves are long-term care and disability income insurance.

1B. Exemptions

An insurer who intends to file for one of the exemptions under this Section must submit a letter of intent to its domiciliary commissioner no later than December 1 of the calendar year for which the exemption is to be claimed. The commissioner may deny the exemption prior to December 31 of the same year if he or she deems the exemption inappropriate.

A copy of the approved exemption must be filed with the Annual Statement in all jurisdictions in which the company is authorized.

Exemption for Small Companies

An insurer that has less than $1,000,000 total direct plus assumed written premiums during a calendar year, and less than $1,000,000 total direct plus assumed loss and loss adjustment expense reserves at year-end, in lieu of the Actuarial Opinion required for the calendar year, may submit an affidavit under oath of an officer of the insurer that specifies the amounts of direct plus assumed written premiums and direct plus assumed loss and loss adjustment reserves.

Exemption for Insurers under Supervision or Conservatorship

Unless ordered by the domiciliary commissioner, an insurer that is under supervision or conservatorship pursuant to statutory provision is exempt from the filing requirements contained herein.

Exemption for Nature of Business

An insurer otherwise subject to the requirement and not eligible for an exemption as enumerated above may apply to its domiciliary commissioner for an exemption based on the nature of business written.

Financial Hardship Exemption

An insurer otherwise subject to this requirement and not eligible for an exemption as enumerated above may apply to the commissioner for a financial hardship exemption. Financial hardship is presumed to exist if the projected reasonable cost of the Actuarial Opinion would exceed the lesser of:

(i) One percent (1%) of the insurer's capital and surplus reflected in the insurer's latest quarterly statement for the calendar year for which the exemption is sought; or

(ii) Three percent (3%) of the insurer's direct plus assumed premiums written during the calendar year for which the exemption is sought as projected from the insurer's latest quarterly statements filed with its domiciliary commissioner.

1C. Reporting Requirements for Pooled Companies

For each company in the pool, the Appointed Actuary shall include a description of the pool, identification of the lead company and a listing of all companies in the pool, their state of domicile and their respective pooling percentages.

Exhibits A and B for each company in the pool should represent the company's share of the pool and should reconcile to the financial statement for that company.

The following paragraph applies to companies that have a 0% share of the pool (no reported Schedule P data). The company shall submit an Actuarial Opinion that reads similar to that provided for the lead company. For example, the IRIS ratio and risk of material adverse deviation discussions, and other relevant comments shall relate to the risks of the lead company in the pool. The Exhibit B responses to question 5 should be $0 and to question 6 should be "not applicable." Exhibits A and B of the lead company should be attached as an addendum to the PDF file and/or hard copy being filed (but would not be reported by the 0% companies in their data capture).

2. The Actuarial Opinion must consist of an IDENTIFICATION paragraph identifying the Appointed Actuary; a SCOPE paragraph identifying the subjects on which an opinion is to be expressed and describing the scope of the Appointed Actuary's work; an OPINION paragraph expressing his or her opinion with respect to such subjects; and one or more additional RELEVANT COMMENTS paragraphs. These four sections must be clearly designated.

3. The IDENTIFICATION paragraph should indicate the Appointed Actuary's relationship to the Company, qualifications for acting as Appointed Actuary and date of appointment and specify that the appointment was made by the Board of Directors.

If the Appointed Actuary was approved by the Academy to be a "Qualified Actuary," with or without limitation, or if the Appointed Actuary is not a Qualified Actuary but was approved by the domiciliary commissioner, the company must attach, each year, the approval letter and reference such in the identification paragraph.

4. The SCOPE paragraph should contain a sentence such as the following:

"I have examined the actuarial assumptions and methods used in determining reserves listed in Exhibit A, as shown in the Annual Statement of the Company as prepared for filing with state regulatory officials, as of December 31, 20__, and reviewed information provided to me through XXX date."

Exhibit A should list those items and amounts with respect to which the Appointed Actuary is expressing an opinion.

The Appointed Actuary should state that the items in the SCOPE, on which he or she is expressing an opinion, reflect Disclosure items 8 through 13.2 in Exhibit B.

The SCOPE paragraph should include a paragraph such as the following regarding the data used by the Appointed Actuary in forming the opinion:

"In forming my opinion on the loss and loss adjustment expense reserves, I relied upon data prepared by _____ (officer name and title at the Company). I evaluated that data for reasonableness and consistency. I also reconciled that data to Schedule P, Part 1 of the Company's current Annual Statement. In other respects, my examination included such review of the actuarial assumptions and methods used and such tests of the calculations as I considered necessary."

5. The OPINION paragraph should include a sentence that at least covers the points listed in the following illustration: "In my opinion, the amounts carried in Exhibit A on account of the items identified:

   A. Meet the requirements of the insurance laws of (state of domicile).

   B. Are computed in accordance with accepted actuarial standards.

   C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements."

If the Scope includes material Unearned Premium Reserves for P&C Long Duration Contracts or Other Loss Reserve items on which the Appointed Actuary is expressing an opinion, the Actuarial Opinion should contain language such as the following:

   D. Make a reasonable provision for the unearned premium reserves for P&C Long Duration Contracts and/or <insert Other Loss Reserve item on which the Appointed Actuary is expressing an Opinion> of the Company under the terms of its contracts and agreements.

If there is any aggregation or combination of items in Exhibit A, the opinion language should clearly identify the combined items.

Insurance laws and regulations shall at all times take precedence over the actuarial standards.

If the Appointed Actuary has made use of the analysis of another actuary not within the Appointed Actuary's control (such as for pools and associations, for a subsidiary or for special lines of business) for a material portion of the reserves, the other actuary must be identified by name, credential and affiliation within the OPINION paragraph. If the Appointed Actuary has made use of the work of a non-actuary (such as for modeling) for a material portion of the reserves, that individual must be identified by name and affiliation and a description of the type of analysis performed must be provided.

A Statement of Actuarial Opinion should be made in accordance with one of the following sections (1 through 5). The Appointed Actuary must explicitly identify in Exhibit B which type applies.

1. Determination of Reasonable Provision. When the carried reserve amount is within the Appointed Actuary's range of reasonable reserve estimates, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount makes a reasonable provision for the liabilities associated with the specified reserves.

2. Determination of Deficient or Inadequate Provision. When the carried reserve amount is less than the minimum amount that the Appointed Actuary believes is reasonable, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the Appointed Actuary should disclose the minimum amount that the Appointed Actuary believes is reasonable.

3. Determination of Redundant or Excessive Provision. When the carried reserve amount is greater than the maximum amount that the Appointed Actuary believes is reasonable, the Appointed Actuary should issue a Statement of Actuarial Opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the Appointed Actuary should disclose the maximum amount that the Appointed Actuary believes is reasonable.

4. Qualified Opinion. When, in the Appointed Actuary's opinion, the reserves for a certain item or items are in question because they cannot be reasonably estimated or the Appointed Actuary is unable to render an opinion on those items, the Appointed Actuary should issue a qualified Statement of Actuarial Opinion. The Appointed Actuary should disclose the item (or items) to which the qualification relates, the reason(s) for the qualification and the amounts for such item(s), if disclosed by the Company. Such a qualified opinion should state whether the carried reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, *except for* the item (or items) to which the qualification relates. The Appointed Actuary is not required to issue a qualified opinion if the Appointed Actuary reasonably believes that the item (or items) in question are not likely to be material.

5. No Opinion. The Appointed Actuary's ability to give an opinion is dependent upon data, analyses, assumptions, and related information that are sufficient to support a conclusion. If the Appointed Actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the Appointed Actuary may issue a statement of no opinion. A statement of no opinion should include a description of the reasons why no opinion could be given.

6. The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address the following topics of regulatory importance.

A. Company-Specific Risk Factors

The Appointed Actuary should include an explanatory paragraph to describe the major factors, combination of factors or particular conditions underlying the risks and uncertainties the Appointed Actuary considers relevant. The explanatory paragraph should not include general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the Appointed Actuary required to include an exhaustive list of all potential sources of risks and uncertainties.

B. Risk of Material Adverse Deviation

The Appointed Actuary must provide specific RELEVANT COMMENT paragraphs to address the risk of material adverse deviation. The Appointed Actuary must identify the materiality standard and the basis for establishing this standard. The materiality standard must also be disclosed in U.S. dollars in Exhibit B: Disclosures. The Appointed Actuary should explicitly state whether or not he or she reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation. This determination is also to be disclosed in Exhibit B.

C. Other Disclosures in Exhibit B

RELEVANT COMMENT paragraphs should describe the significance of each of the remaining Disclosure items (8 through 14) in Exhibit B. The Appointed Actuary should address the items individually and in combination when commenting on a material impact.

D. Reinsurance

RELEVANT COMMENT paragraphs should address reinsurance collectability, retroactive reinsurance and financial reinsurance.

The Appointed Actuary's comments on reinsurance collectability should address any uncertainty associated with including potentially uncollectable amounts in the estimate of ceded reserves. Before commenting on reinsurance collectability, the Appointed Actuary should solicit information from management on any actual collectability problems, review ratings given to reinsurers by a recognized rating service and examine Schedule F for the current year for indications of regulatory action or reinsurance recoverable on paid losses over ninety (90) days past due. The comment should also reflect any other information the Appointed Actuary has received from management or that is publicly available about the capability or willingness of reinsurers to pay claims. The Appointed Actuary's comments do not imply an opinion on the financial condition of any reinsurer.

Retroactive reinsurance refers to agreements referenced in *SSAP No. 62R—Property and Casualty Reinsurance* of the NAIC *Accounting Practices and Procedures Manual*.

Financial reinsurance refers to contracts referenced in SSAP No. 62R in which credit is not allowed for the ceding insurer because the arrangements do not include a transfer of both timing and underwriting risk that the reinsurer undertakes in fact to indemnify the ceding insurer against loss or liability by reason of the original insurance.

E. IRIS Ratios

If the Company's reserves will create exceptional values under the NAIC IRIS Tests for One-Year Reserve Development to Policyholders' Surplus, Two-Year Reserve Development to Policyholders' Surplus or Estimated Current Reserve Deficiency to Policyholders' Surplus, the Appointed Actuary must include RELEVANT COMMENT on the factors that led to the unusual value(s).

F. Methods and Assumptions

If there has been any significant change in the actuarial assumptions and/or methods from those previously employed, that change should be described in a RELEVANT COMMENT paragraph. If the Appointed Actuary is newly appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this.

7. The Actuarial Opinion must include assurance that an Actuarial Report and underlying actuarial workpapers supporting the Actuarial Opinion will be maintained at the Company and available for regulatory examination for seven (7) years. The Actuarial Report contains significant proprietary information. It is expected that the Actuarial Report be held confidential and not be intended for public inspection. The Actuarial Report must be available by May 1 of the year following the year-end for which the Actuarial Opinion was rendered or within two (2) weeks after a request from an individual state commissioner.

The Actuarial Report should be consistent with the documentation and disclosure requirements of ASOP No. 41, Actuarial Communications. The Actuarial Report must contain both narrative and technical components. The narrative component should provide sufficient detail to clearly explain to Company management, the Board of Directors, the regulator or other authority the findings, recommendations and conclusions, as well as their significance. The technical component should provide sufficient documentation and disclosure for another actuary practicing in the same field to evaluate the work. This technical component must show the analysis from the basic data (e.g., loss triangles) to the conclusions.

Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51) in the NAIC *Accounting Practices and Procedures Manual* requires a company with over 10,000 in force lives covered by long-term care (LTC) insurance contracts as of the valuation date to perform a stand-alone asset adequacy analysis for its in force long-term care (LTC) contracts. The Actuarial Report and workpapers summarizing the results, assumptions and testing procedures for the asset adequacy testing of LTC business must be in compliance with AG 51 requirements. When referring to AG 51, the term "Actuarial Memorandum" is synonymous with Actuarial Report and workpapers.

The Actuarial Report should contain disclosure of all reserve amounts associated with A&H Long Duration Contracts reported by the Company; the reserve amounts in the Actuarial Report should tie to the Annual Statement.

The Actuarial Report must also include:

A. A description of the Appointed Actuary's relationship to the Company, with clear presentation of the Appointed Actuary's role in advising the Board of Directors and/or management regarding the carried reserves. The Actuarial Report should identify how and when the Appointed Actuary presents the analysis to the Board of Directors and, where applicable, to the officer(s) of the Company responsible for determining the carried reserves.

B. An exhibit that ties to the Annual Statement and compares the Appointed Actuary's conclusions to the carried amounts consistent with the segmentation of exposure or liability groupings used in the analysis. The Appointed Actuary's conclusions include the Appointed Actuary's point estimate(s), range(s) of reasonable estimates or both.

C. An exhibit that reconciles and maps the data used by the Appointed Actuary, consistent with the segmentation of exposure or liability groupings used in the Appointed Actuary's analysis, to the Annual Statement Schedule P line of business reporting. An explanation should be provided for any material differences.

D. An exhibit or appendix showing the change in the Appointed Actuary's estimates from the prior Actuarial Report, including extended discussion of factors underlying any material changes. The exhibit or appendix should illustrate the changes on a net basis but should also include the changes on a gross basis, if relevant. If the Appointed Actuary is newly appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this.

E. Extended comments on trends that indicate the presence or absence of risks and uncertainties that could result in material adverse deviation.

F. Extended comments on factors that led to unusual IRIS ratios for One-Year Reserve Development to Policyholders' Surplus, Two-Year Reserve Development to Policyholders' Surplus or Estimated Current Reserve Deficiency to Policyholders' Surplus, and how these factors were addressed in prior and current analyses.

8. Both the Actuarial Opinion and the Actuarial Report should conclude with the signature of the Appointed Actuary responsible for providing the Actuarial Opinion and the respective dates when the Actuarial Opinion was rendered and the Actuarial Report finalized. The signature and date should appear in the following format:

_____
Signature of Appointed Actuary
Printed name of Appointed Actuary
Employer's name
Address of Appointed Actuary
Telephone number of Appointed Actuary
Email address of Appointed Actuary
Date opinion was rendered

9. The Insurer required to furnish an Actuarial Opinion shall require its Appointed Actuary to notify its Board of Directors or its audit committee in writing within five (5) business days after any determination by the Appointed Actuary that the Actuarial Opinion submitted to the domiciliary commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect. The Actuarial Opinion shall be considered to be in error if the Actuarial Opinion would have not been issued or would have been materially altered had the correct data or other information been used. The Actuarial Opinion shall not be considered to be in error if it would have been materially altered or not issued solely because of data or information concerning events subsequent to the balance sheet date or because actual results differ from those projected. Notification is required when discovery is made between the issuance of the Actuarial Opinion and Dec. 31 of that year. Notification should include a summary of such findings.

If the Appointed Actuary learns that the data or other information relied upon was factually incorrect, but cannot immediately determine what, if any, changes are needed in the Actuarial Opinion, the Appointed Actuary and the Company should quickly undertake procedures necessary for the Appointed Actuary to make such determination. If the Insurer does not provide the necessary data corrections and other support (including financial support) within ten (10) business days, the Appointed Actuary should proceed with the notification to the Board of Directors and the domiciliary commissioner.

An Insurer who is notified pursuant to the preceding paragraphs shall forward a copy of the amended Actuarial Opinion to the domiciliary commissioner within five (5) business days of receipt of such and shall provide the Appointed Actuary making the notification with a copy of the letter and amended Actuarial Opinion submitted to the domiciliary commissioner. If the Appointed Actuary fails to receive such copy within the five (5) business day period referred to in the previous sentence, the Appointed Actuary shall notify the domiciliary commissioner within the next five (5) business days that an amended Actuarial Opinion has been finalized.

No Appointed Actuary shall be liable in any manner to any person for any statement made in connection with the above paragraphs if such statement is made in a good faith effort to comply with the above paragraphs.

10. Data in Exhibits A and B are to be filed in both print and data capture format.

Exhibit A: SCOPE

DATA TO BE FILED IN BOTH PRINT AND DATA CAPTURE FORMATS

Loss and Loss Adjustment Expense Reserves:		Amount
1. Unpaid Losses (Liabilities, Surplus and Other Funds page, Col 1, Line 1)	$	_____
2. Unpaid Loss Adjustment Expenses (Liabilities, Surplus and Other Funds page, Col 1, Line 3)	$	_____
3. Unpaid Losses – Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Cols. 13 and 15, Line 12 * 1000)	$	_____
4. Unpaid Loss Adjustment Expenses – Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Cols. 17, 19 and 21, Line 12 * 1000)	$	_____
5. The Page 3 write-in item reserve, "Retroactive Reinsurance Reserve Assumed"	$	_____
6. Other Loss Reserve items on which the Appointed Actuary is expressing an Opinion (list separately, adding additional lines as needed)	$	_____
Premium Reserves:		
7. Reserve for Direct and Assumed Unearned Premiums for P&C Long Duration Contracts	$	_____
8. Reserve for Net Unearned Premiums for P&C Long Duration Contracts	$	_____
9. Other Premium Reserve items on which the Appointed Actuary is expressing an Opinion (list separately, adding additional lines as needed)	$	_____

Exhibit B: DISCLOSURES

DATA TO BE FILED IN BOTH PRINT AND DATA CAPTURE FORMATS

NOTE: Exhibit B should be completed for Net dollar amounts included in the SCOPE. If an answer would be different for Direct and Assumed amounts, identify and discuss the difference within RELEVANT COMMENTS.

1. Name of the Appointed Actuary — Last _____ First _____ Mid _____
2. The Appointed Actuary's relationship to the Company
   Enter E or C based upon the following:
   - E if an Employee of the Company or Group
   - C if a Consultant — _____
3. The Appointed Actuary's Accepted Actuarial Designation (indicated by the letter code):
   - F if a Fellow of the Casualty Actuarial Society (FCAS)
   - A if an Associate of the Casualty Actuarial Society (ACAS)
   - S if a Fellow of the Society of Actuaries (FSA) through the General Insurance track
   - M if the actuary does not have an Accepted Actuarial Designation but is approved by the Academy's Casualty Practice Council.
   - O for Other — _____
4. Type of Opinion, as identified in the OPINION paragraph. Enter R, I, E, Q, or N based upon the following:
   - R if Reasonable
   - I if Inadequate or Deficient Provision
   - E if Excessive or Redundant Provision
   - Q if Qualified. Use Q when part of the OPINION is Qualified.
   - N if No Opinion — _____
5. Materiality Standard expressed in U.S. dollars (used to Answer Question #6) — $ _____
6. Are there significant risks that could result in Material Adverse Deviation? — Yes [ ] No [ ] Not Applicable [ ]
7. Statutory Surplus (Liabilities, Surplus and Other Funds page, Col 1, Line 37) — $ _____
8. Anticipated net salvage and subrogation included as a reduction to loss reserves as reported in Schedule P (should equal Part 1 Summary, Col 23, Line 12 * 1000) — $ _____
9. Discount included as a reduction to loss reserves and loss adjustment expense reserves as reported in Schedule P
   - 9.1 Nontabular Discount [Notes, Line 32B23, (Amounts 1, 2, 3 & 4)], Electronic Filing Cols 1, 2, 3, & 4 — $ _____
   - 9.2 Tabular Discount [Notes, Line 32A23, (Amounts 1 & 2)], Electronic Filing Col 1 & 2 — $ _____
10. The net reserves for losses and loss adjustment expenses for the Company's share of voluntary and involuntary underwriting pools' and associations' unpaid losses and loss adjustment expenses that are included in reserves shown on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines — $ _____

11. The net reserves for losses and loss adjustment expenses that the Company carries for the following liabilities included on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines *

    11.1 Asbestos, as disclosed in the Notes to Financial Statements (Notes, Line 33A03D, ending net asbestos reserves for current year) Electronic Filing Col 5 $ _____

    11.2 Environmental, as disclosed in the Notes to Financial Statements (Notes, Line 33D03D, ending net environmental reserves for current year), Electronic Filing Col 5 $ _____

12. The total claims made extended loss and loss adjustment expense, and unearned premium reserves (Greater than or equal to Schedule P Interrogatories)

    12.1 Amount reported as loss and loss adjustment expense reserves $ _____

    12.2 Amount reported as unearned premium reserves $ _____

13. The net reserves for the A&H Long Duration Contracts that the Company carries on the following lines on the Liabilities, Surplus and Other Funds page:

    13.1 Losses $ _____

    13.2 Loss Adjustment Expenses $ _____

    13.3 Unearned Premium $ _____

    13.4 Write-In (list separately, adding additional lines as needed, and identify (e.g., "Premium Deficiency Reserves", "Contract Reserves other than Premium Deficiency Reserves" or "AG 51 Reserves")) $ _____

14. Other items on which the Appointed Actuary is providing relevant comment (list separately, adding additional lines as needed) $_____

* The reserves disclosed in item 11 above, should exclude amounts relating to contracts specifically written to cover asbestos and environmental exposures. Contracts specifically written to cover these exposures include Environmental Impairment Liability (post 1986), Asbestos Abatement, Pollution Legal Liability, Contractor's Pollution Liability, Consultant's Environmental Liability, and Pollution and Remediation Legal Liability.

I.2 2021 NAIC Property and Casualty AOS Instructions

ACTUARIAL OPINION SUMMARY SUPPLEMENT

1. For all Companies that are required by their domiciliary state to submit a confidential document entitled Actuarial Opinion Summary (AOS), such document shall be filed with the domiciliary state by March 15 (or by a later date otherwise specified by the domiciliary state). This AOS shall be submitted to a non-domiciliary state within 15 days of request, but no earlier than March 15, provided that the requesting state can demonstrate, through the existence of law or some similar means, that it is able to preserve the confidentiality of the document.

2. The AOS should be consistent with the appropriate Actuarial Standards of Practice (ASOPs), including but not limited to ASOP No. 23, ASOP No. 41 and ASOP No. 43, as promulgated by the Actuarial Standards Board, and Statements of Principles adopted by the Casualty Actuarial Society.

3. Exemptions for filing the AOS are the same as those for filing the Statement of Actuarial Opinion.

4. The AOS contains significant proprietary information. It is expected that the AOS be held confidential; it is not intended for public inspection. The AOS should not be filed with the NAIC and should be kept separate from any copy of the Statement of Actuarial Opinion (Actuarial Opinion) in order to maintain confidentiality of the AOS. The AOS can contain a statement that refers to the Actuarial Opinion and the date of that opinion.

5. The AOS should be signed and dated by the Appointed Actuary who signed the Actuarial Opinion and shall include at least the following:

   A. The Appointed Actuary's range of reasonable estimates for loss and loss adjustment expense reserves, net and gross of reinsurance, when calculated;

   B. The Appointed Actuary's point estimates for loss and loss adjustment expense reserves, net and gross of reinsurance, when calculated;

   C. The Company's carried loss and loss adjustment expense reserves, net and gross of reinsurance;

   D. The difference between the Company's carried reserves and the Appointed Actuary's estimates calculated in A and B, net and gross of reinsurance; and

   E. Where there has been one-year adverse development in excess of 5% of the prior year-end's policyholders' surplus as measured by Schedule P, Part 2 Summary in three (3) or more of the past five (5) calendar years, an explicit description of the reserve elements or management decisions that were the major contributors.

6. The AOS for a pooled Company (as referenced in paragraph 1C of the instructions for the Actuarial Opinion) shall include a statement that the Company is a xx% pool participant. For a non-0% Company, the information provided for paragraph 5 should be numbers after the Company's share of the pool has been applied; specifically, the point or range comparison should be for each statutory Company and should not be for the pool in total. For any 0% pool participant, the information provided for paragraph 5 should be that of the lead company.

7. The net and gross reserve values reported by the Appointed Actuary in the AOS should reconcile to the corresponding values reported in the Insurer's Annual Statement, the Appointed Actuary's Actuarial Opinion and the Actuarial Report. If not, the Appointed Actuary shall provide an explanation of the difference.

8. The Insurer required to furnish an AOS shall require its Appointed Actuary to notify its Board of Directors in writing within five (5) business days after any determination by the Appointed Actuary that the AOS submitted to the domiciliary commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect. The AOS shall be considered to be in error if the AOS would have not been issued or would have been materially altered had the correct data or other information been used. The AOS shall not be considered to be in error if it would have been materially altered or not issued solely because of data or information concerning events subsequent to the balance sheet date or because actual results differ from those projected. Notification shall be required when discovery is made between the issuance of the AOS and Dec. 31 of that year. Notification should include a summary of such findings.

   If the Appointed Actuary learns that the data or other information relied upon was factually incorrect, but cannot immediately determine what, if any, changes are needed in the AOS, the Appointed Actuary and the Company should quickly undertake procedures necessary for the Appointed Actuary to make such determination. If the Insurer does not provide the necessary data corrections and other support (including financial support) within ten (10) business days, the Appointed Actuary should proceed with the notification to the Board of Directors and the domiciliary commissioner.

   An Insurer who is notified pursuant to the preceding paragraphs shall forward a copy of the amended AOS to the domiciliary commissioner within five (5) business days of receipt of such and shall provide the Appointed Actuary making the notification with a copy of the letter and amended AOS submitted to the domiciliary commissioner. If the Appointed Actuary fails to receive such copy within the five (5) business day period referred to in the previous sentence, the Appointed Actuary shall notify the domiciliary commissioner within the next five (5) business days that an amended AOS has been finalized.

9. No Appointed Actuary shall be liable in any manner to any person for any statement made in connection with the above paragraphs if such statement is made in a good faith effort to comply with the above paragraphs.

I.3 2021 NAIC Title SAO Instructions

ACTUARIAL OPINION

1. There is to be included with or attached to Page 1 of the Annual Statement, the statement of a Qualified Actuary, entitled "Statement of Actuarial Opinion" (Actuarial Opinion) setting forth his or her opinion relating to reserves specified in the SCOPE paragraph. The Actuarial Opinion, both the narrative and **required** exhibits, shall be in the format of and contain the information required by this section of the *Annual Statement Instructions – Title*.

   The Qualified Actuary must be appointed by the Board of Directors or its equivalent, or by a committee of the Board, by December 31 of the calendar year for which the opinion is rendered. Upon initial appointment (or "retention"), the Company shall notify the domiciliary commissioner within five business days of the appointment with the following information:

   a. Name and title (and, in the case of a consulting actuary, the name of the firm).

   b. Manner of appointment of the Appointed Actuary (e.g., who made the appointment and when).

   c. A statement that the person meets the requirements of a Qualified Actuary.

   Once this notification is furnished, no further notice is required with respect to this person unless the actuary ceases to be appointed or retained or ceases to meet the requirements of a Qualified Actuary.

   If an actuary who was the Appointed Actuary for the immediately preceding filed Actuarial Opinion is replaced by an action of the Board of Directors, the Insurer shall within five (5) business days notify the Insurance Department of the state of domicile of this event. The Insurer shall also furnish the domiciliary commissioner with a separate letter within ten (10) business days of the above notification stating whether in the twenty-four (24) months preceding such event there were any disagreements with the former Appointed Actuary regarding the content of the opinion on matters of the risk of material adverse deviation, required disclosures, scope, procedures, type of opinion issued, substantive wording of the opinion or data quality. The disagreements required to be reported in response to this paragraph include both those resolved to the former actuary's satisfaction and those not resolved to the former actuary's satisfaction. The letter should include a description of the disagreements and the nature of its resolution (or that it was not resolved). The Insurer shall also request in writing such former actuary to furnish a letter addressed to the Insurer stating whether the actuary agrees with the statements contained in Insurer's letter and, if not, stating the reasons for which he or she does not agree; and the Insurer shall furnish such responsive letter from the former actuary to the domiciliary commissioner together with its own.

   The Appointed Actuary must report to the Board of Directors or the Audit Committee each year on the items within the scope of the Actuarial Opinion. The Actuarial Opinion and the Actuarial Report must be made available to the Board of Directors. The minutes of the Board of Directors should indicate that the Appointed Actuary has presented such information to the Board of Directors or the Audit Committee and that the Actuarial Opinion and the Actuarial Report were made available. A separate Actuarial Opinion is required for each company filing an Annual Statement. When there is an affiliated company pooling arrangement, one Actuarial Report for the aggregate pool is sufficient, but there must be addendums to the Actuarial Report to cover non-pooled reserves for individual companies.

   The Actuarial Opinion and the supporting Actuarial Report and workpapers, should be consistent with the appropriate Actuarial Standards of Practice (ASOPs), including but not limited to ASOP No. 23, ASOP No. 36, ASOP No. 41 and ASOP No. 43, as promulgated by the Actuarial Standards Board.

1A. Definitions

"Qualified Actuary" is a person who is either:

(i) A member in good standing of the Casualty Actuarial Society; or

(ii) A member in good standing of the American Academy of Actuaries who has been approved as qualified for signing casualty loss reserve opinions by the Casualty Practice Council of the American Academy of Actuaries.

"Insurer" or "Company" means a reporting entity authorized to write title insurance under the laws of any state and who files on the Title Blank.

"Actuarial Report" means a document or other presentation, prepared as a formal means of conveying to the state regulatory authority and the Board of Directors, or its equivalent, the actuary's professional conclusions and recommendations, of recording and communicating the methods and procedures, of assuring that the parties addressed are aware of the significance of the actuary's opinion or findings and of documenting the analysis underlying the opinion. The expected content of the Actuarial Report is further described in paragraph 7. (Note that the inclusion of the Board of Directors as part of the intended audience for the Actuarial Report does not change the content of the Actuarial Report as described in paragraph 7. The Appointed Actuary should present findings to the Board of Directors in a manner deemed suitable for such audience.)

1B. Exemptions

An insurer who intends to file for one of the exemptions under this section must submit a letter of intent to its domiciliary commissioner no later than December 1 of the calendar year for which the exemption is to be claimed. The commissioner may deny the exemption prior to December 31 of the same year if the exemption is deemed inappropriate.

A copy of the approved exemption must be filed with the Annual Statement in all jurisdictions in which the company is authorized.

Exemption for Small Companies

An insurer that has less than $1,000,000 total direct plus assumed written premiums during a calendar year, and less than $1,000,000 total direct plus assumed loss and loss adjustment expense reserves at year-end, in lieu of the Actuarial Opinion required for the calendar year, may submit an affidavit under oath of an officer of the insurer that specifies the amounts of direct plus assumed written premiums and direct plus assumed loss and loss adjustment reserves.

Exemption for Insurers under Supervision or Conservatorship

Unless ordered by the domiciliary commissioner, an insurer that is under supervision or conservatorship pursuant to statutory provision is exempt from the filing requirements contained herein.

Exemption for Nature of Business

An insurer otherwise subject to the requirement and not eligible for an exemption as enumerated above may apply to its domiciliary commissioner for an exemption based on the nature of business written.

Financial Hardship Exemption

An insurer otherwise subject to this requirement and not eligible for an exemption as enumerated above may apply to the commissioner for a financial hardship exemption.

Financial hardship is presumed to exist if the projected reasonable cost of the opinion would exceed the lesser of:

(i) One percent (1%) of the insurer's capital and surplus reflected in the insurer's latest quarterly statement for the calendar year for which the exemption is sought; or

(ii) Three percent (3%) of the insurer's direct plus assumed premiums written during the calendar year for which the exemption is sought as projected from the insurer's latest quarterly statements filed with its domiciliary commissioner.

2. The Statement of Actuarial Opinion must consist of an IDENTIFICATION paragraph identifying the Appointed Actuary; a SCOPE paragraph identifying the subjects on which an opinion is to be expressed and describing the scope of the actuary's work; an OPINION paragraph expressing his or her opinion with respect to such subjects and one or more additional RELEVANT COMMENTS paragraphs. These four sections must be clearly designated.

3. The IDENTIFICATION paragraph should indicate the Appointed Actuary's relationship to the Company, qualifications for acting as Appointed Actuary, and date of appointment, and specify that the appointment was made by the Board of Directors (or its equivalent) or by a committee of the Board.

A member of the American Academy of Actuaries qualifying under paragraph 1A(ii) must attach, each year, a copy of the approval letter from the Academy.

These instructions require that a Qualified Actuary prepare the Actuarial Opinion. If a person who does not meet the definition of a Qualified Actuary has been approved by the insurance regulatory official of the domiciliary state, the Company must attach, each year, a letter from that official stating that the individual meets the state's requirements for rendering the Actuarial Opinion.

4. The SCOPE paragraph should contain a sentence such as the following:

> "I have examined the actuarial assumptions and methods used in determining reserves listed in Exhibit A, as shown in the Annual Statement of the Company as prepared for filing with state regulatory officials, as of December 31, 20__, and reviewed information provided to me through XXX date."

Exhibit A should list those items and amounts with respect to which the Appointed Actuary is expressing an opinion.

The Appointed Actuary should state that the items in the SCOPE paragraph, on which he or she is expressing an opinion, reflect the Disclosure items (8 through 14) in Exhibit B.

The SCOPE paragraph should include a paragraph such as the following regarding the data used by the Appointed Actuary in forming the opinion:

> "In forming my opinion on the loss and loss adjustment expense reserves, I relied upon data prepared by _____ (name, affiliation and relation to Company). I evaluated that data for reasonableness and consistency. I also reconciled that data to Schedule P, Parts 1 and 2 of the Company's current Annual Statement. In other respects, my examination included such review of the actuarial assumptions and methods used and such tests of the calculations as I considered necessary."

5. The OPINION paragraph should include a sentence that at least covers the points listed in the following illustration:

"In my opinion, the amounts carried in Exhibit A on account of the items identified:

A. Meet the requirements of the insurance laws of (state of domicile).

B. Are computed in accordance with accepted actuarial standards.

C. Make a reasonable provision for all unpaid loss and loss adjustment expense obligations of the Company under the terms of its contracts and agreements."

If there is any aggregation or combination of items in Exhibit A, the opinion language should clearly identify the combined items.

Insurance laws and regulations shall at all times take precedence over the actuarial standards.

If the actuary has made use of the work of another actuary (such as for pools and associations, for a subsidiary or for special lines of business) for a material portion of the reserves, the other actuary must be identified by name and affiliation within the OPINION paragraph.

A Statement of Actuarial Opinion should be made in accordance with one of the following sections (a through e). The actuary must explicitly identify in Exhibit B which type applies.

a. Determination of Reasonable Provision. When the carried reserve amount is within the actuary's range of reasonable reserve estimates, the actuary should issue a Statement of Actuarial Opinion that the carried reserve amount makes a reasonable provision for the liabilities associated with the specified reserves.

b. Determination of Deficient or Inadequate Provision. When the carried reserve amount is less than the minimum amount that the actuary believes is reasonable, the actuary should issue a statement of actuarial opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the actuary should disclose the minimum amount that the actuary believes is reasonable.

c. Determination of Redundant or Excessive Provision. When the carried reserve amount is greater than the maximum amount that the actuary believes is reasonable, the actuary should issue a Statement of Actuarial Opinion that the carried reserve amount does not make a reasonable provision for the liabilities associated with the specified reserves. In addition, the actuary should disclose the maximum amount that the actuary believes is reasonable.

d. Qualified Opinion. When, in the actuary's opinion, the reserves for a certain item or items are in question because they cannot be reasonably estimated or the actuary is unable to render an opinion on those items, the actuary should issue a qualified Statement of Actuarial Opinion. The actuary should disclose the item (or items) to which the qualification relates, the reasons for the qualification, and the amounts for such item(s), if disclosed by the Company. Such a qualified opinion should state whether the stated reserve amount makes a reasonable provision for the liabilities associated with the specified reserves, *except for* the item (or items) to which the qualification relates. The actuary is not required to issue a qualified opinion if the actuary reasonably believes that the item (or items) in question are not likely to be material.

e. No Opinion. The actuary's ability to give an opinion is dependent upon data, analyses, assumptions, and related information that are sufficient to support a conclusion. If the actuary cannot reach a conclusion due to deficiencies or limitations in the data, analyses, assumptions, or related information, then the actuary may issue a statement of no opinion. A statement of no opinion should include a description of the reasons why no opinion could be given.

6. The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address the following topics of regulatory importance.

    a. Risk of Material Adverse Deviation.

        The Appointed Actuary must provide specific RELEVANT COMMENT paragraphs to address the risk of material adverse deviation. The Appointed Actuary must identify the materiality standard and the basis for establishing this standard with respect to the relevant characteristics of the Company. The materiality standard must also be disclosed in U.S. dollars in Exhibit B: Disclosures. The Appointed Actuary should include an explanatory paragraph to describe the major factors, combination of factors or particular conditions underlying the risks and uncertainties the actuary considers relevant. The explanatory paragraph should not include general, broad statements about risks and uncertainties due to economic changes, judicial decisions, regulatory actions, political or social forces, etc., nor is the Appointed Actuary required to include an exhaustive list of all potential sources of risks and uncertainties. The Appointed Actuary should explicitly state whether or not he or she reasonably believes that there are significant risks and uncertainties that could result in material adverse deviation. This determination is also to be disclosed in Exhibit B.

    b. Other Disclosures in Exhibit B

        RELEVANT COMMENT paragraphs should describe the significance of each of the remaining Disclosure items (8 through 14) in Exhibit B. The Appointed Actuary should address the items individually and in combination when commenting on a material impact.

        If the Company's reserves will cause the ratio of One-Year or Two-Year Known Claims Reserve Development (shown in Schedule P, Part 3) to the respective prior year's Policyholders' Surplus to be greater than 20%, the Appointed Actuary must include RELEVANT COMMENT on the factors that led to the exceptional reserve development.

    c. Reinsurance

        RELEVANT COMMENT paragraphs should address reinsurance collectability, retroactive reinsurance and financial reinsurance .

        The Appointed Actuary's comments on reinsurance collectability should address any uncertainty associated with including potentially-uncollectable amounts in the estimate of ceded reserves. Before commenting on reinsurance collectability, the Appointed Actuary should solicit information from management on any actual collectability problems, review ratings given to reinsurers by a recognized rating service, and examine Schedule F for the current year for indications of regulatory action or reinsurance recoverable on paid losses over ninety (90) days past due. The comment should also reflect any other information the actuary has received from management or that is publicly available about the capability or willingness of reinsurers to pay claims. The Appointed Actuary's comments do not imply an opinion on the financial condition of any reinsurer.

        Retroactive reinsurance refers to agreements referenced in *SSAP No. 62R—Property and Casualty Reinsurance* of the *Accounting Practices and Procedures Manual*.

        Financial reinsurance refers to contracts referenced in *SSAP No. 62R—Property and Casualty Reinsurance* of the *Accounting Practices and Procedures Manual* in which credit is not allowed for the ceding insurer because the arrangements do not include a transfer of both timing and underwriting risk that the reinsurer undertakes in fact to indemnify the ceding insurer against loss or liability by reason of the original insurance.

    d. Reserve Development

        If the Company's reserves will cause the ratio of One-Year or Two-Year Reserve Development (shown in Schedule P, Part 2) to the respective prior year's Policyholders' Surplus to be greater than 20%, the Appointed actuary must include RELEVANT COMMENT on the factors that led to the exceptional reserve development.

e. Methods and Assumptions

If there has been any significant change in the actuarial assumptions and/or methods from those previously employed, that change should be described in a RELEVANT COMMENT paragraph. If the Appointed Actuary is newly-appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this.

7. The Actuarial Opinion must include assurance that an Actuarial Report and underlying actuarial workpapers supporting the Actuarial Opinion will be maintained at the Company and available for examination for seven years. The Actuarial Report contains significant proprietary information. It is expected that the Actuarial Report be held confidential and not be intended for public inspection. The Actuarial Report must be available by May 1 of the year following the year-end for which the Opinion was rendered or within two (2) weeks after a request from an individual state commissioner.

   The Actuarial Report should be consistent with the documentation and disclosure requirements of ASOP No. 41, Actuarial Communications. The Actuarial Report must contain both narrative and technical components. The narrative component should provide sufficient detail to clearly explain to company management, the Board of Directors, the regulator, or other authority the findings, recommendations and conclusions, as well as their significance. The technical component should provide sufficient documentation and disclosure for another actuary practicing in the same field to evaluate the work. This technical component must show the analysis from the basic data (e.g., loss triangles) to the conclusions.

   The Actuarial Report must also include:

   - A description of the Appointed Actuary's relationship to the Company, with clear presentation of the Appointed Actuary's role in advising the Board and/or management regarding the carried reserves. The Actuarial Report should identify how and when the Appointed Actuary presents the analysis to the Board and, where applicable, to the officer(s) of the Company responsible for determining the carried reserves.

   - An exhibit that ties to the Annual Statement and compares the Appointed Actuary's conclusions to the carried amounts consistent with the segmentation of exposure or liability groupings used in the analysis. The Appointed Actuary's conclusions include the Appointed Actuary's point estimate(s), range(s) of reasonable estimates or both.

   - An exhibit that reconciles and maps the data used by the Appointed Actuary, consistent with the segmentation of exposure or liability groupings used in the Appointed Actuary's analysis, to the Annual Statement Schedule P.

   - An exhibit or appendix showing the change in the Appointed Actuary's estimates from the prior Actuarial Report, including extended discussion of factors underlying any material changes. If the Appointed Actuary is newly-appointed and does not review the work of the prior Appointed Actuary, then the Appointed Actuary should disclose this.

   - Extended comments on trends that indicate the presence or absence of risks and uncertainties that could result in material adverse deviation.

   - Extended comments on factors that led to exceptional reserve development, as defined in 6C and 6D, and how these factors were addressed in prior and current analyses.

8. The statement should conclude with the signature of the Appointed Actuary responsible for providing the Actuarial Opinion and the date when the Opinion was rendered. The signature and date should appear in the following format:

_____
Signature of Appointed Actuary
Printed name of Appointed actuary
Employer's name
Address of Appointed Actuary
Telephone number of Appointed Actuary
Email address of Appointed Actuary
Date opinion was rendered

9. The Insurer required to furnish an Actuarial Opinion shall require its Appointed Actuary to notify its Board of Directors or its audit committee in writing within five (5) business days after any determination by the Appointed Actuary that the Opinion submitted to the domiciliary commissioner was in error as a result of reliance on data or other information (other than assumptions) that, as of the balance sheet date, was factually incorrect. The Opinion shall be considered to be in error if the Opinion would have not been issued or would have been materially altered had the correct data or other information been used. The Opinion shall not be considered to be in error if it would have been materially altered or not issued solely because of data or information concerning events subsequent to the balance sheet date or because actual results differ from those projected.

Notification shall be required for any such determination made between the issuance of the Actuarial Opinion and the balance sheet date for which the next Actuarial Opinion will be issued. The notification should include a summary of such findings and an amended Actuarial Opinion.

An Insurer who is notified pursuant to the preceding paragraphs shall forward a copy of the summary and the amended Actuarial Opinion to the domiciliary commissioner within five (5) business days of receipt of such and shall provide the Appointed Actuary making the notification with a copy of the summary and amended Actuarial Opinion being furnished to the domiciliary commissioner. If the Appointed Actuary fails to receive such copy within the five (5) business day period referred to in the previous sentence, the Appointed Actuary shall notify the domiciliary commissioner within the next five (5) business days that the submitted Actuarial Opinion should no longer be relied upon or such other notification recommended by the actuary's attorney.

If the Appointed Actuary learns that the data or other information relied upon was factually incorrect, but cannot immediately determine what, if any, changes are needed in the Actuarial Opinion, the actuary and the Company should undertake as quickly as is reasonably practical those procedures necessary for the Appointed Actuary to make the determination discussed above. If the Insurer does not provide the necessary data corrections and other support (including financial support) within ten (10) business days, the actuary should proceed with the notification discussed above.

No Appointed Actuary shall be liable in any manner to any person for any statement made in connection with the above paragraphs if such statement is made in a good faith effort to comply with the above paragraphs.

10. Data in Exhibit A and Exhibit B are to be filed in both print and data capture format.

STATEMENT OF ACTUARIAL OPINION

Exhibit A: SCOPE
DATA TO BE FILED IN BOTH PRINT AND DATA CAPTURE FORMAT

LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES:	Amount
1. Unpaid Losses and Loss Adjustment Expenses (Schedule P, Part 1, Total Column 24 or 34 if discounting is allowable under state law)	$ _____
2. Unpaid Losses and Loss Adjustment Expenses - Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Columns 17, 18, 20, 21, and 23, Line 12 x 1000)	$ _____
3. Other items on which the Appointed Actuary is expressing an Opinion (list separately, adding additional lines as needed)	$ _____

Exhibit B: DISCLOSURES
DATA TO BE FILED IN BOTH PRINT AND DATA CAPTURE FORMAT

NOTE: Exhibit B should be completed for Net dollar amounts included in the SCOPE. If an answer would be different for Direct and Assumed amounts, identify and discuss the difference within RELEVANT COMMENTS.

	Last	First	Middle
1. Name of the Appointed Actuary	_____	_____	_____

2. The Appointed Actuary's relationship to the Company.

   Enter E or C based upon the following:

   E - If an Employee of the Company or Group

   C - If a Consultant _____

3. The Appointed Actuary has the following designation (indicated by the letter code):

   F - If a Fellow of the Casualty Actuarial Society (FCAS)

   A - If an Associate of the Casualty Actuarial Society (ACAS)

   M - If not a member of the Casualty Actuarial Society, but a Member of the American Academy of Actuaries (MAAA) approved by the Casualty Practice Council, as documented with the attached approval letter.

   O - For Other _____

4. Type of Opinion, as identified in the OPINION paragraph. Enter R, I, E, Q, or N based upon the following:

   R - If Reasonable

   I - If Inadequate or Deficient Provision

   E - If Excessive or Redundant Provision

   Q - If Qualified (use Q when part of the OPINION is Qualified)

   N - If No Opinion _____

5. Materiality Standard expressed in U.S. dollars (used to answer question #6) $ _____

6. Are there significant risks that could result in Material Adverse Deviation? _____

7. Statutory Surplus (Liabilities, Surplus, and Other Funds Page, Line 32) $ _____

8. Known claims reserve (Liabilities, Surplus, and Other Funds Page, Line 1) $ _____

9. Statutory premium reserve (Liabilities, Surplus, and Other Funds Page, Line 2) $ _____

10. Aggregate of other reserves required by law (Liabilities, Surplus, and Other Funds Page, Line 3) $ _____

11. Supplemental reserve (Liabilities, Surplus, and Other Funds Page, Line 4) $ _____

12. Anticipated net salvage and subrogation included as a reduction to loss reserves as reported in Schedule P $ _____

13. Discount included as a reduction to loss reserves and loss adjustment expense reserves as reported in Schedule P $ _____

14. Other items on which the Appointed Actuary is providing relevant comment (list separately, adding additional lines as needed) $ _____

I.4 2021 NAIC Annual Statement Instructions – Excerpt Regarding Auditor Data Testing

ANNUAL AUDITED FINANCIAL REPORTS

All states have a statute or regulation that requires an annual audit of their insurance companies by an independent certified public accountant based on the NAIC *Annual Financial Reporting Model Regulation (#205)*. For guidance regarding this model, see Appendix G of the NAIC *Accounting Practices and Procedures Manual*.

The reporting entity shall require the independent certified public accountant to subject the current Schedule P – Part 1 (excluding those amounts related to bulk and IBNR reserves and claim counts) to the auditing procedures applied in the audit of the current statutory financial statements to determine whether Schedule P – Part 1 is fairly stated in all material respects in relation to the basic statutory financial statements taken as a whole. It is expected that the auditing procedures applied by the independent CPA to the claim loss and loss adjustment expense data from which Schedule P – Part 1 is prepared would be applied to activity that occurred in the current calendar year (e.g., tests of payments on claims for all accident years that were paid during the current calendar year). [Refer to American Institute of Certified Public Accountants Statement of Position 92-8.]

The reporting entity shall also require the independent certified public accountant to subject the data used by the appointed actuary to testing procedures. The auditor is required to determine what historical data and methods have been used by management in developing the loss reserve estimate and whether the auditor will rely on the same data or other statistical data in evaluating the reasonableness of the loss reserve estimate. After identifying the relevant data, the auditor should obtain an understanding of the controls related to the completeness, accuracy, and classification of loss data and perform testing as the auditor deems appropriate. Through inquiry of the Appointed Actuary, the auditor should obtain an understanding of the data identified by the Appointed Actuary as significant. It is recognized that there will be instances when data identified by the Appointed Actuary as significant to his or her reserve projections would not otherwise have been tested as part of the audit, and separate testing would be required. Unless, otherwise agreed among the Appointed Actuary, management and the auditor, the scope of the work performed by the auditor in testing the claims data in the course of the audit would be sufficient to determine whether the data tested is fairly stated in all material respects in relation to the statutory financial statement taken as a whole. The auditing procedures should be applied to the claim loss and defense and cost containment expense data used by the Appointed Actuary and would be applied to activity that occurred in the current calendar year (e.g., tests of payments on claims paid during the current calendar year).

II. 2021 AOWG Regulatory Guidance

REGULATORY GUIDANCE on Property and Casualty Statutory Statements of Actuarial Opinion, Actuarial Opinion Summaries, and Actuarial Reports for the Year 2021

Prepared by the NAIC Actuarial Opinion (C) Working Group
of the Casualty Actuarial and Statistical (C) Task Force

The NAIC Actuarial Opinion (C) Working Group (Working Group) of the Casualty Actuarial and Statistical (C) Task Force believes that the Statement of Actuarial Opinion (Actuarial Opinion), Actuarial Opinion Summary (AOS), and Actuarial Report are valuable tools in serving the regulatory mission of protecting consumers. This Regulatory Guidance document supplements the NAIC *Annual Statement Instructions – Property/Casualty* (*Instructions*) in an effort to provide clarity and timely guidance to companies and Appointed Actuaries regarding regulatory expectations on the Actuarial Opinion, AOS, and Actuarial Report.

An Appointed Actuary has a responsibility to know and understand both the *Instructions* and the expectations of state insurance regulators. One expectation of regulators clearly presented in the *Instructions* is that the Actuarial Opinion, AOS, and supporting Actuarial Report and workpapers be consistent with relevant Actuarial Standards of Practice (ASOPs).

2021 Editorial Change to the Instructions

As a result of the Casualty Actuarial Society's rescinding of the Statement of Reserving Principles this year, editorial changes were made to the Instructions to remove the reference to "principles." The Appointed Actuary should be aware of this as it would impact the wording in item b. in the Opinion paragraph.

There have been changes to the *Instructions* for 2018 and 2019. As a result of these changes, the *Instructions* now:

- Include a new definition for "Accident & Health (A&H) Long Duration Contracts" in order to draw a distinction between these contracts and the Property and Casualty (P&C) Long Duration Contracts whose unearned premium reserves are reported on Exhibit A, Items 7 and 8,
- Add a reference to SSAP No. 65 in the definition of P&C Long Duration Contracts,
- Include a new disclosure item on Exhibit B for net reserves associated with A&H Long Duration Contracts,
- State that the Actuarial Report should disclose all reserve amounts associated with A&H Long Duration Contracts, and
- State that the Actuarial Report and workpapers summarizing the asset adequacy testing of long-term care contracts must be in compliance with *Actuarial Guideline LI – The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves* (AG 51) of the *Accounting Practices and Procedures Manual*.
- Pursuant to efforts undertaken by the Task Force and the Executive (EX) Committee, the definition of "Qualified Actuary" is significantly revised and a new requirement called "qualification documentation" was added. These changes are described in this Regulatory Guidance document and additional guidance is offered to assist an Appointed Actuary in creating qualification documentation.

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I. General comments

A. Reconciliation between documents

If there are any differences between the values reported in the Actuarial Opinion, AOS, Actuarial Report, and Annual Statement, the Working Group expects Appointed Actuaries to include an explanation for these differences in the appropriate document (Actuarial Opinion, AOS, or Actuarial Report). The use of a robust peer review process by the Appointed Actuary should reduce reporting errors and non-reconciling items.

One situation in which a legitimate difference might arise is in the case of non-tabular discounting: The direct and assumed loss reserves on line 3 of the Actuarial Opinion's Exhibit A come from Schedule P, Part 1, which is gross of non-tabular discounting, while the Actuarial Report and AOS might present the direct and assumed loss reserves on a net of discounting basis.

B. Role of illustrative language in the Instructions

While the *Instructions* provide some illustrative language, the Working Group encourages Appointed Actuaries to use whatever language they believe is appropriate to clearly convey their opinion and the basis for that opinion. In forming their opinion, Appointed Actuaries should consider company-specific characteristics such as intercompany pooling arrangements; recent mergers or acquisitions; and significant changes in operations, product mix, or reinsurance arrangements.

C. Qualified Actuary definition

With the introduction of an additional educational track for property and casualty (P/C) actuaries, the NAIC needed to consider revisions to the definition of "Qualified Actuary." Upon receiving advice from a consultant on the NAIC's definition of a "Qualified Actuary," the NAIC began a project to re-define a Qualified Actuary using objective criteria. Upon nomination by the Casualty Actuarial Society (CAS), Society of Actuaries (SOA), and the American Academy of Actuaries (Academy), many Appointed Actuaries and other subject matter experts volunteered to assist the NAIC. The NAIC's P/C Appointed Actuary Job Analysis Project resulted in documentation of knowledge statements, or what an Appointed Actuary may need to know and do. The NAIC's P/C Educational Standards and Assessment Project resulted in documentation of which elements in each knowledge statement should be included in basic education as a minimum standard, with the remaining elements achievable through experience or continuing education. Using the minimum educational standards, the NAIC and subject matter experts assessed the CAS and SOA syllabi and reading materials. The CAS and SOA have made or agreed to make specific changes to their syllabi and/or reading materials to meet the standards. The revised syllabi and reference materials are required to be in place by Jan. 1, 2021.

As a result of these NAIC projects, the definition of "Qualified Actuary" was crafted to include basic education requirements and professionalism requirements (e.g. application of U.S. Qualification Standards, Code of Conduct, and ABCD). The definition of Qualified Actuary replaces the requirement to be "a member in good standing of the Casualty Actuarial Society" with a requirement to obtain and maintain an "Accepted Actuarial Designation." An Accepted Actuarial Designation is one that was considered by the NAIC to meet the NAIC's minimum educational standards for an Appointed Actuary. See the *Instructions* for the list of Accepted Actuarial Designations. It is important to note that some designations are accepted as meeting the basic education standards only if certain specific exams and/or tracks are successfully completed (with exceptions noted in the exam substitutions table of the *Instructions*). The NAIC process requires a recurring assessment of the "Qualified Actuary" definition every 5-10 years.

The NAIC does not intend to retroactively change requirements for Appointed Actuaries. If an actuary previously met the 2018 qualified actuary definition but lacks the specific exams and/or tracks under the new definition, the *Instructions* provide a list of acceptable substitutions.

D. Qualification documentation

The 2019 *Instructions* require the Appointed Actuary to provide "qualification documentation" to the Board of Directors upon initial appointment and annually thereafter. The documentation provided to the Board must be available to the

regulator upon request and during a financial examination. Guidance on qualification documentation is in Section IV of this document.

E. Replacement of an Appointed Actuary

The *Instructions* require two letters when the Board replaces an Appointed Actuary: one addressed from the insurer to the domiciliary commissioner, and one addressed from the former Appointed Actuary to the insurer. The insurer must provide both of these letters to the domiciliary commissioner.

The detailed steps are as follows:

1. Within 5 business days, the insurer shall notify its domiciliary insurance department that the former Appointed Actuary has been replaced.
2. Within 10 business days of the notification in step 1, the insurer shall provide the domiciliary commissioner with a letter stating whether in the 24 months preceding the replacement, there were disagreements with the former Appointed Actuary. The *Instructions* describe the types of disagreements required to be reported in the letter.
3. Within the same 10 business days referred to in step 2, the insurer shall, in writing, request that its former Appointed Actuary provide a letter addressed to the insurer stating whether the former Appointed Actuary agrees with the statements contained in the insurer's letter referenced in step 2.
4. Within 10 business days of the request from the insurer described in step 3, the former Appointed Actuary shall provide a written response to the insurer.
5. The insurer shall provide the letter described in step 2 and the response from the former Appointed Actuary described in step 4 to the domiciliary commissioner.

Regarding the disagreements referenced in step 2 above, regulators understand that there may be disagreements between the Appointed Actuary and the insurer during the course of the Appointed Actuary's analysis that are resolved by the time the Appointed Actuary concludes the analysis. For instance, the Appointed Actuary's analysis may go through several iterations, and an insurer's comments on the Appointed Actuary's draft Actuarial Report may prompt the Appointed Actuary to make changes to the report. While regulators are interested in material disagreements regarding differences between the former Appointed Actuary's final estimates and the insurer's carried reserves, they do not expect notification on routine discussions that occur during the course of the Appointed Actuary's work.

F. Reporting to the Board of Directors

The Appointed Actuary is required to report to the insurer's Board every year, and the *Instructions* were amended in 2016 to require the Board's minutes to specify the manner in which the Appointed Actuary presented the required information. This may be done in a form of the Appointed Actuary's choosing, including, but not limited to, an executive summary or PowerPoint presentation. The Working Group strongly encourages the Appointed Actuary to present his or her analysis in person so that the risks and uncertainties that underlie the exposures and the significance of the Appointed Actuary's findings can be adequately conveyed and discussed. Regardless of how the Appointed Actuary presents his or her conclusions, the Actuarial Report must be made available to the Board.

Management is limited to reporting single values on lines 1 and 3 of the Liabilities, Surplus, and Other Funds page of the balance sheet. However, actuarial estimates are uncertain by nature, and point estimates do not convey the variability in the projections. Therefore, the Board should be made aware of the Appointed Actuary's opinion regarding the risk of material adverse deviation, the sources of risk, and what amount of adverse deviation the Appointed Actuary judges to be material.

G. Requirements for pooled companies

Effective with the 2014 *Instructions*, requirements for companies that participate in intercompany pools are as follows:

For all intercompany pooling members:

- Text of the Actuarial Opinion should include the following:
  - Description of the pool
  - Identification of the lead company
  - A listing of all companies in the pool, their state of domicile, and their respective pooling percentages
- Exhibits A and B should represent the company's share of the pool and should reconcile to the financial statement for that company

For intercompany pooling members with a 0% share of the pooled reserves:

- Text of the Actuarial Opinion should be similar to that of the lead company
- Exhibits A and B should reflect the 0% company's values
  - Response to Exhibit B, Item 5 (materiality standard) should be $0
  - Response to Exhibit B, Item 6 (risk of material adverse deviation) should be "not applicable"
- Exhibits A and B of the lead company should be filed with the 0% company's Actuarial Opinion
- Information in the AOS should be that of the lead company

Note the distinction between pooling with a 100% lead company with no retrocession and ceding 100% via a quota share reinsurance agreement. The regulator must approve these affiliate agreements as either an intercompany pooling arrangement or a quota share reinsurance agreement. The proper financial reporting is dependent on the approved filings, regardless of how company management regards its operating platform.

For intercompany pooling members with a greater than 0% share of the pooled reserves, regulators encourage the Appointed Actuary to display values in the AOS on a pooled (or consolidated) basis in addition to the statutory entity basis. This can be accomplished by displaying two tables of information.

H. Explanation of adverse development

1. Comments on unusual Insurance Regulatory Information System (IRIS) ratios in the Actuarial Opinion

   The Appointed Actuary is required to provide comments in the Actuarial Opinion on factors that led to unusual values for IRIS ratios 11, 12, or 13. The Working Group considers it insufficient to attribute unusual reserve development to "reserve strengthening" or "adverse development" and expects the Appointed Actuary to provide insight into the company-specific factors which caused the unusual value. Detailed documentation should be included in the Actuarial Report to support statements provided in the Actuarial Opinion.

2. Comments on persistent adverse development in the AOS

   The Appointed Actuary is required to comment on persistent adverse development in the AOS. Comments can reflect common questions that regulators have, such as:

   - Is development concentrated in one or two exposure segments, or is it broad across all segments?
   - How does development in the carried reserve compare to the change in the Appointed Actuary's estimate?
   - Is development related to specific and identifiable situations that are unique to the company?
   - Does the development or the reasons for development differ depending on the individual calendar or accident years?

I. Revisions

When a material error in the Actuarial Opinion or AOS is discovered by the Appointed Actuary, the company, the regulator, or any other party, regulators expect to receive a revised Actuarial Opinion or AOS.

Regardless of the reason for the change or refiling, the company should submit the revised Actuarial Opinion in hard copy to its domiciliary state and electronically to the NAIC. The company should submit the revised AOS in hard copy to the domiciliary state but should not submit the document to the NAIC.

A revised Actuarial Opinion or AOS should clearly state that it is an amended document, contain or accompany an explanation for the revision, and include the date of revision.

II. Comments on Actuarial Opinion and Actuarial Report

A. Review date

The illustrative language for the Scope paragraph includes "… and reviewed information provided to me through XXX date." This is intended to capture the ASOP No. 36 requirement to disclose the date through which material information known to the Appointed Actuary is included in forming the reserve opinion (the review date), if it differs from the date the Actuarial Opinion is signed. When the Appointed Actuary is silent regarding the review date, this can indicate either that the review date is the same as the date the Actuarial Opinion is signed or that the Appointed Actuary overlooked this disclosure requirement. When the Appointed Actuary's review date is the same as the date the Actuarial Opinion is signed, regulators suggest the Appointed Actuary clarify this in the Actuarial Opinion by including a phrase such as "… and reviewed information provided to me through the date of this opinion."

B. Making use of another's work

If the Appointed Actuary makes use of the work of another not within the Appointed Actuary's control for a material portion of the reserves, the *Instructions* say that the Appointed Actuary must provide the following information in the Actuarial Opinion:

- The person's name;
- The person's affiliation;
- The person's credential(s), if the person is an actuary; and
- A description of the type of analysis performed, if the person is not an actuary.

Furthermore, Section 4.2.f of ASOP No. 36 says that the actuary should disclose whether he or she reviewed the other's underlying analysis and, if so, the extent of the review. Though this is not mentioned in the ASOP, the Working Group encourages the Appointed Actuary to consider discussing his or her conclusions from the review.

Section 3.7.2 of ASOP No. 36 describes items the actuary should consider when determining whether it is reasonable to make use of the work of another. One of these items is the amount of the reserves covered by the other's analyses or opinions in comparison to the total reserves subject to the actuary's opinion. The Working Group encourages the Appointed Actuary to disclose these items in the Actuarial Opinion by providing the dollar amount of the reserves covered by the other's analyses or opinions and the percentage of the total reserves subject to the Appointed Actuary's opinion that these other reserves represent.

C. Points A and B of the Opinion paragraph when opinion type is other than reasonable

Regulators encourage Appointed Actuaries to think about their responses to point A (meet the requirements of the insurance laws of the state) and point B (computed in accordance with accepted actuarial standards) of the Opinion paragraph when they issue an Actuarial Opinion of a type other than "Reasonable."

D. Conclusions on a net versus a direct and assumed basis

Unless the Appointed Actuary states otherwise, regulators will assume that the Appointed Actuary's conclusion on the type of opinion rendered, provided in points C and D of the Opinion paragraph, applies to both the net and the direct and assumed reserves. If the Appointed Actuary reaches different conclusions on the net versus the direct and assumed reserves, the Appointed Actuary should include narrative comments to describe the differences and clearly convey a complete opinion. The response to Exhibit B, Item 4 should reflect the Appointed Actuary's opinion on the net reserves.

Similarly, the materiality standard in Exhibit B, Item 5 and the RMAD conclusion in Exhibit B, Item 6 should pertain to the net reserves. If the Appointed Actuary reaches a different conclusion on the risk of material adverse deviation in the net versus the direct and assumed reserves, the Appointed Actuary should include a Relevant Comments paragraph to address the differences. Regulators understand that a net versus a direct and assumed RMAD will have different meanings and, potentially, different materiality standards.

E. Unearned premium for P&C Long Duration Contracts

Exhibit A, Items 7 and 8 require disclosure of the unearned premium reserve for P&C Long Duration Contracts. The *Instructions* require the Appointed Actuary to include a point D in the Opinion paragraph regarding the reasonableness of the unearned premium reserve when these reserves are material.

The Working Group expects that the Appointed Actuary will include documentation in the Actuarial Report to support a conclusion on reasonableness whenever point D is included in the Actuarial Opinion. This documentation may include the three tests of SSAP No. 65 or other methods deemed appropriate by the Appointed Actuary to support his or her conclusion.

Regulators see many opinions where dollar amounts are included in Exhibit A, Items 7 and 8; some opinions include a Relevant Comments paragraph discussing these amounts and some do not. Regulators would prefer at a minimum that Appointed Actuaries include some discussion in Relevant Comments on these amounts including an explicit statement as to whether these amounts are material or immaterial.

F. Other premium reserve items

With regard to "Other Premium Reserve Items" in Exhibit A, Item 9, the Appointed Actuary should include an explanatory paragraph about these premium reserves in Relevant Comments and state whether the amounts are material or immaterial. If the amounts are material, and the Appointed Actuary states the amounts are reasonable in an Opinion paragraph, regulators would expect the actuarial documentation to support this conclusion in the Actuarial Report.

Typical items regulators see listed as "Other Premium Reserve Items" are Medical Professional Liability Death, Disability & Retirement (DD&R) unearned premium reserves (UPR) and Other Liability Claims DD&R UPR. Depending on the nature of these exposures, these items may be also listed on Exhibit B, Line 12.2 as claims made extended UPR.

G. The importance of Relevant Comments paragraphs

The Working Group considers the Relevant Comments paragraphs to be the most valuable information in the Actuarial Opinion. Relevant Comments help the regulator interpret the Actuarial Opinion and understand the Appointed Actuary's reasoning and judgment. In addition to the required Relevant Comments, the Appointed Actuary should consider providing information on other material items such as reinsurance with affiliates, mergers or acquisitions, other premium reserves, and catastrophe risk.

H. Risk of Material Adverse Deviation

The Relevant Comments paragraphs on the Risk of Material Adverse Deviation (RMAD) are particularly useful to regulators. The first two RMAD comments below respond to questions that Appointed Actuaries have posed to regulators. The second two stem from regulators' reviews of Actuarial Opinions.

1. No company-specific risk factors – The Appointed Actuary is asked to discuss company-specific risk factors regardless of the RMAD conclusion. If the Appointed Actuary does not believe that there are any company-specific risk factors, the Appointed Actuary should state that.

2. Mitigating factors – Regulators generally expect Appointed Actuaries to comment on significant company-specific risk factors that exist prior to the company's application of controls or use of mitigation techniques. The company's risk management behaviors may, however, affect the Appointed Actuary's RMAD conclusion.

3. Consideration of carried reserves, materiality standard, and reserve range when making RMAD conclusion – When deciding whether RMAD exists, the Appointed Actuary should consider the materiality standard in relation to the range of reasonable estimates and the carried reserves. For example, RMAD should likely exist when the sum of the materiality standard plus the carried reserves is within the range of reasonable estimates. Regardless, the Appointed Actuary should support the conclusion of whether RMAD exists.

4. Materiality standards for intercompany pool members – With the exception of intercompany pooling members that retain a 0% share, each statutory entity is required to have a separate Actuarial Opinion with its own materiality standard. Where there are no unusual circumstances to consider, it may be acceptable to determine a standard for the entire pool and assign each member its proportionate share of the total. It is not appropriate to use the entire amount of the materiality threshold for the pool as the standard for each individual pool member.

I. Regulators' use of the Actuarial Report

Regulators should be able to rely on the Actuarial Report as an alternative to developing their own independent estimates. A well-prepared and well-documented Actuarial Report that complies with ASOP No. 41 can provide a foundation for efficient reserve evaluation during a statutory financial examination. This expedites the examination process and may provide cost savings to the company.

1. Schedule P reconciliation

The Working Group acknowledges that myriad circumstances (such as mergers, acquisitions, changes in claim systems, and the use of underwriting year data in the analysis) may make it difficult for the Appointed Actuary to reconcile the analysis data to Schedule P. The Working Group encourages Appointed Actuaries to disclose reconciliation issues in the Actuarial Report. If the data cannot be reconciled, the Appointed Actuary should document the reasons.

The Working Group believes that:

- A summary reconciliation that combines all years and all lines is an insufficient demonstration of data integrity. A reconciliation should include enough detail to reflect the segmentation of exposures used in the reserve analysis, the accident years of loss activity and the methods used by the Appointed Actuary. While it is important that the Appointed Actuary is provided with complete and accurate data, reconciling the data **provided** to the Appointed Actuary to Schedule P is not sufficient to demonstrate that the data **used** by the Appointed Actuary reconciles to Schedule P. It is important for the Appointed Actuary to demonstrate that in the process of performing the actuarial analysis, data was neither created nor destroyed. This is commonly accomplished by showing a clear mapping from the Appointed Actuary's analysis exhibits to the actuarial data shown in the Schedule P reconciliation.
- The Appointed Actuary should map the data groupings used in the analysis to Schedule P lines of business and should provide detailed reconciliations of the data at the finest level of segmentation that is possible and practical. The Working Group recognizes that the Appointed Actuary chooses the data segmentation for the analysis and that there is often not a direct correspondence between analysis segments and Schedule P lines of business.
- The Appointed Actuary should reconcile all data material to the analysis, including claim counts and earned premium if appropriate. If the Appointed Actuary chooses not to reconcile certain data elements used in the analysis, such as claim counts, a brief explanation should be included in the Actuarial Report to make it clear that these elements were not inadvertently overlooked.

- Schedule P reconciliations are expected to be performed on both a Direct & Assumed basis and a Net of Reinsurance basis. If circumstances specific to the company lead the Appointed Actuary to perform the reconciliation on only one basis, the rationale for this decision should be explained in the Actuarial Report. Similarly, while the reconciliation of the loss-related elements, such as Defense & Cost Containment and Adjusting & Other expenses, is generally expected to be on the same level as used in the analysis underlying the Actuarial Opinion, the Appointed Actuary has the discretion to deviate as long as the rationale is explained in the Actuarial Report.
- The *Instructions* require that the Appointed Actuary include an explanation for any material differences in the Schedule P Reconciliation. When differences appear in the reconciliation but are viewed as immaterial by the Appointed Actuary, the Appointed Actuary should acknowledge the immateriality of the differences in the Actuarial Report in order to assure regulators that the Appointed Actuary is aware of the differences and has considered the potential impact of the differences on the analysis underlying the Actuarial Opinion.

The Working Group draws a distinction between two types of data checks:

- The Schedule P reconciliation performed by the Appointed Actuary. The purpose of this exercise is to show the user of the Actuarial Report that the data significant to the Appointed Actuary's analysis ties to the data in Schedule P.
- Annual testing performed by independent CPAs to verify the completeness and accuracy of the data in Schedule P or the analysis data provided by the company to the Appointed Actuary.

One key difference is that independent CPAs generally apply auditing procedures to loss and loss adjustment expense activity that occurred in the current calendar year (for example, tests of payments on claims for all accident years that were paid during the current calendar year). Projection methodologies used by Appointed Actuaries, on the other hand, often use cumulative loss and loss adjustment expense data, which may render insufficient a testing of activity during the current calendar year alone.

Along similar lines, regulators encourage Appointed Actuaries to consider whether a reconciliation of incremental payments during the most recent calendar year for all accident/report years combined provides sufficient assurance of the integrity of the data used in the analysis, given that development factors are generally applied to cumulative paid losses by accident/report year.

2. Change in estimates

The Working Group expects the Appointed Actuary to discuss any significant change in the Appointed Actuary's total estimates from the prior Actuarial Report. However, an explanation should also be included for any significant fluctuations within accident years or segments. When preparing the change-in-estimates exhibits, the Appointed Actuary should choose a level of granularity that provides meaningful comparisons between the prior and current year's results.

3. Narrative

The narrative section of the Actuarial Report should clearly convey the significance of the Appointed Actuary's findings and conclusions, the uncertainty in the estimates, and any differences between the Appointed Actuary's estimates and the carried reserves.

4. Support for assumptions

Appointed Actuaries should support their assumptions. The use of phrases like "actuarial judgment," either in the narrative comments or in exhibit footnotes, is not sufficient. A descriptive rationale is needed.

The selection of expected loss ratios could often benefit from expanded documentation. When making their selection, Appointed Actuaries should consider incorporating rate changes, frequency and severity trends, and other adjustments needed to on-level the historical information. Historical loss ratio indications have little value if items such as rate actions, tort reform, schedule rating adjustments, or program revisions have materially affected premium adequacy.

5. Support for roll forward analyses

The Working Group recognizes that the majority of the analysis supporting an Actuarial Opinion may be done with data received prior to year-end and "rolled forward" to year-end. By reviewing the Actuarial Report, the regulator should be able to clearly identify why the Appointed Actuary made changes in the ultimate loss selections and how those changes were incorporated into the final estimates. A summary of final selections without supporting documentation is not sufficient.

J. Exhibits A and B

1. "Data capture format"

The term "data capture format" in Exhibits A and B of the *Instructions* refers to an electronic submission of the data in a format usable for computer queries. This process allows for the population of an NAIC database that contains qualitative information and financial data. Appointed Actuaries should assist the company in accurately completing the electronic submission.

2. Scope of Exhibit B, Item 12

Exhibit B, Item 12 requests information on extended loss and unearned premium reserves for all property/casualty lines of business, not just medical professional liability. The Schedule P Interrogatories referenced in the parenthetical only address reserves associated with yet-to-be-issued extended reporting endorsements offered in the case of death, disability, or retirement of an individual insured under a medical professional liability claims-made policy.

3. Exhibit B, Item 13

The Working Group added disclosure item Exhibit B, Item 13 in 2018. This item requests information on reserves associated with "A&H Long Duration Contracts," defined in the *Instructions* as "A&H contracts in which the contract term is greater than or equal to 13 months and contract reserves are required."

This disclosure item was added for several reasons:

- **A desire by regulators to gain a greater understanding of property and casualty insurers' exposure to A&H Long Duration Contracts.**
  - This guidance does not specify how P&C insurers should report the liabilities associated with A&H Long Duration Contracts on the annual statement. Through work performed on financial examinations, regulators have found that P&C insurers may include the liabilities in various line items of the Liabilities, Surplus and Other Funds page. SSAP No. 54R provides accounting guidance for insurers.
  - Regardless of where the amounts are reported on the annual statement, the materiality of the amounts, and whether the insurer is subject to AG 51, the Appointed Actuary should disclose the amounts associated with A&H Long Duration Contracts on Exhibit B, Item 13. The Appointed Actuary should provide commentary in a Relevant Comments paragraph in accordance with paragraph 6.C of the *Instructions*. The Appointed Actuary should also disclose all reserve amounts associated with A&H Long Duration Contracts in the Actuarial Report.

- **The adoption of AG 51 in 2017.** On August 9, 2017, the NAIC's Executive (EX) Committee and Plenary adopted AG 51 requiring stand-alone asset adequacy analysis of long-term care (LTC) business. The text of AG 51 is included in the March 2019 edition of the NAIC's Accounting Practices and Procedures Manual The effective date of AG 51 was December 31, 2017, and it applies to companies with over 10,000 inforce lives covered by LTC insurance contracts as of the valuation date. The *Instructions* state that the Actuarial Report and workpapers summarizing the asset adequacy testing of LTC business must be in compliance with AG 51 requirements.

- **Recent adverse reserve development in LTC business.** Regulators expect Appointed Actuaries to disclose company-specific risk factors in the Actuarial Opinion. Given the recent adverse experience for LTC

business, Appointed Actuaries should consider whether exposure to A&H Long Duration Contracts poses a risk factor for the company.

The Appointed Actuary is not asked to opine on the reasonableness of the reserves associated with A&H Long Duration Contracts except to the extent that the reserves are included within the amounts reported on Exhibit A of the Actuarial Opinion. For this reason, the Working Group intentionally excluded Items 13.3 and 13.4 from this sentence in paragraph 4 of the Instructions: "The Appointed Actuary should state that the items in the SCOPE, on which he or she is expressing an opinion, reflect Disclosure items 8 through 13.2 in Exhibit B." Exhibit B, Item 13.1 asks the Appointed Actuary to disclose the reserves for A&H Long Duration Contracts that the company carries on the Losses line of the Liabilities, Surplus and Other Funds page. The Appointed Actuary is not asked to opine on the reasonableness of the reserves disclosed on Exhibit B, Item 13.1 in isolation, but these reserves are a subset of the amount included on Exhibit A, Item 1, and Exhibit A lists amounts with respect to which the Appointed Actuary is expressing an opinion. The same is true for Exhibit B, Item 13.2, whose reserves are a subset of the amount included on Exhibit A, Item 2.

A&H Long Duration Contracts are distinct from P&C Long Duration Contracts. There were no changes to the opinion requirements in 2018 regarding P&C Long Duration Contracts, but the Working Group added a reference to SSAP No. 65 in the definition of "P&C Long Duration Contracts" to clarify the difference between "A&H Long Duration Contracts" and "P&C Long Duration Contracts." The newly-added mention of SSAP No. 65 in the *Instructions* is not intended to change the Appointed Actuary's treatment of P&C Long Duration Contracts in the Actuarial Opinion or the underlying analysis, but insurers and Appointed Actuaries may refer to SSAP No. 65, paragraphs 21 through 33 for a description of the three tests, a description of the types of P&C contracts to which the tests apply, guidance on the minimum required reserves, and instructions on the Actuarial Opinion and Actuarial Report.

III. Comments on AOS

A. Confidentiality

The AOS is a confidential document and should be clearly labeled and identified prominently as such. The AOS is not submitted to the NAIC. The Working Group advises the Appointed Actuary to provide the AOS to company personnel separately from the Actuarial Opinion and to avoid attaching the related Actuarial Opinion to the AOS.

B. Different requirements by state

Not all states have enacted the NAIC Property and Casualty Actuarial Opinion Model Law (#745), which requires the AOS to be filed. Nevertheless, the Working Group recommends that the Appointed Actuary prepare the AOS regardless of the domiciliary state's requirements, so that the AOS will be ready for submission should a foreign state – having the appropriate confidentiality safeguards – request it.

Most states provide the Annual Statement contact person with a checklist that addresses filing requirements. The Working Group advises the Appointed Actuary to work with the company to determine the requirements for its domiciliary state.

C. Format

The purpose of the AOS is to show a comparison between the company's carried reserves and the Appointed Actuary's estimates. Because the AOS is a synopsis of the conclusions drawn in the Actuarial Report, the content of the AOS should reflect the analysis performed by the Appointed Actuary. Therefore, all of the Appointed Actuary's calculated estimates, including actuarial central estimates and ranges, are to be presented in the AOS consistent with estimates presented in the Actuarial Report.

The American Academy of Actuaries' Committee on Property and Liability Financial Reporting provides illustrative examples in its annual practice note "Statements of Actuarial Opinion on Property and Casualty Loss Reserves" that show how the Appointed Actuary might choose to display the required information. These examples present the numerical data in an easy-to-read table format.

IV. Guidance on qualification documentation

The Instructions have been modified for 2019 to require the Appointed Actuary to document qualifications in what is called "qualification documentation." The qualification documentation needs to be provided to the Board of Directors at initial appointment and annually thereafter.

The following provides guidance Appointed Actuaries may find useful in drafting qualification documentation. Appointed Actuaries should use professional judgment when preparing the documentation and need not use the sample wording or format provided below. As a general principle, Appointed Actuaries should provide enough detail within the documentation to demonstrate that they satisfy each component of the 'Qualified Actuary' definition. In crafting the qualification documentation it may be helpful to think about what is important for the Board of Directors to know about their Appointed Actuary's qualifications, and to remember that documentation should be relevant to the subject of the Actuarial Opinion being issued.

A. Brief biographical information

- The Appointed Actuary may provide resume-type information.
- Information may include the following:
    - professional actuarial designation(s) and year(s) first attained
    - insurance or actuarial coursework or degrees;
    - actuarial employment history: company names, position title, years of employment, and relevant information regarding the type of work (e.g., reserving, ratemaking, ERM)

B. "Qualified Actuary" definition

The Appointed Actuary should provide a description of how the definition of "Qualified Actuary" in the Instructions is met or expected to be met (in the case of continuing education) for that year. The Appointed Actuary should provide information similar to the following. Items (i) through (iii) below correspond with items (i) through (iii) in the Qualified Actuary definition.

(i) "I meet the basic education, experience and continuing education requirements of the Specific Qualification Standards for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement, as set forth in the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States (U.S. Qualification Standards), promulgated by the American Academy of Actuaries (Academy). The following describes how I meet these requirements:

a. Basic education:"

[Option 1] "met through relevant examinations administered by the Casualty Actuarial Society;" or

[Option 2] "met through alternative basic education." The Appointed Actuary should further review documentation necessary per section 3.1.2 of the U.S. Qualification Standards.

b. "Experience requirements: met through relevant experience as described below."

- To describe the Appointed Actuary's responsible experience relevant to the subject of the Actuarial Opinion, information may include specific actuarial experiences relevant to the company's structure (e.g., insurer, reinsurer, RRG), lines of business, or special circumstances.
- Experiences may include education (through organized activities or readings) about specific types of company structures, lines of business, or special circumstances.

c. "Continuing education: met (or expected to be met) through a combination of [industry conferences; seminars (both in-person and webinar); online courses; committee work; self-study; etc.], on topics including _____ (provide a brief overview of the CE topics. For example, 'trends in workers' compensation' or 'standards of actuarial practice on reserving.'). A detailed log of my continuing education credit hours is available upon request."

- Section 3.3 of the Specific Qualification Standards for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement requires the Appointed Actuary to earn 15 hours of CE on topics mentioned in Section 3.1.1.2. The Appointed Actuary should consider providing expanded detail on the completion (or planned completion) of these hours in the CE documentation.

(ii) "I have obtained and maintain an Accepted Actuarial Designation." One of the following statements may be made, depending on the Appointed Actuary's exam track:

- "I am a Fellow of the CAS (FCAS) and my basic education includes credit for Exam 6 – Regulation and Financial Reporting (United States)."
- "I am an Associate of the CAS (ACAS) and my basic education includes credit for Exam 6 – Regulation and Financial Reporting United States) and Exam 7 – Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management."
- "I am a Fellow of the SOA (FSA) and my basic education includes completion of the general insurance track, including the following optional exams: the United States' version of the Financial and Regulatory Environment Exam and the Advanced Topics in General Insurance Exam."

Alternatively, if the actuary was evaluated by the Academy's Casualty Practice Council and determined to be a Qualified Actuary, the Appointed Actuary may note such and identify any restrictions or limitations, including those for lines of business and business activities.

(iii) "I am a member of [professional actuarial association] that requires adherence to the same Code of Professional Conduct promulgated by the Academy, requires adherence to the U.S. Qualification Standards, and participates in the Actuarial Board for Counseling and Discipline when its members are practicing in the U.S."

C. CE logging procedure

The Casualty Actuarial and Statistical (C) Task Force continues to work with the CAS and SOA to identify types of learning that P/C Appointed Actuaries are using to meet continuing education (CE) requirements for 'Specific Qualification Standards' today and whether more specificity should be added to the P/C Appointed Actuaries' CE requirements to ensure CE is aligned with the educational needs for a P/C Appointed Actuary.

The Task Force has adopted a project plan that includes requirements for 1) categorization of CE in the Appointed Actuaries' CE log and 2) CE log reviews by the CAS/SOA of a percentage of Appointed Actuaries. Starting with year-end 2020, Appointed Actuaries selected for review by the CAS or SOA must either use a specific logging format for their CE logs or add a column to one's current log. Appointed actuaries are encouraged to categorize their CE throughout the year, since waiting until the review (if selected) may compromise the accuracy of categorization. While selected Appointed Actuaries will submit their individual logs, the CAS and SOA will only share aggregated information with the NAIC. Please refer to the CAS and SOA for information on CE logging and submission instructions, CE categories, and categorization rules.

D. Proposed deadline for qualification documentation

The Working Group is considering establishing a deadline for the Appointed Actuary to submit its qualification documentation to the Board of Directors. The deadline is expected to be in the latter part of the year. If this revision is affirmed, it is expected to become effective for the 2022 Opinion, meaning that Appointed Actuaries should plan to provide their qualification documentation to the Board no later than the deadline to be announced in the 2022 Instructions.

V. COVID-19

COVID-19 and related economic events have had a significant impact on insurance liabilities for some lines of business. Furthermore, the effects of COVID-19 could extend to other aspects of the company's operations and the claims process. The Appointed Actuary should consider the direct impacts to loss and unearned premium reserves, claims patterns and loss trends, collectability of reinsurance and/or premiums, exposure, etc., as well as indirect impacts such as claims handling delays and procedural changes resulting from public health orders. It is important for the Appointed Actuary to understand the company's treatment of any changes stemming from COVID-19, for example premium refunds or rate reductions, in the annual financial statement. The impact of such financial reporting on assumptions and methods used in the actuarial analysis should be discussed within the Actuarial Report.

If the impact on reserves is significant, the actuary should make relevant comments on COVID-19 impacts and discuss the corresponding actuarial assumptions in the Statement of Actuarial Opinion. Otherwise, Appointed Actuaries are still strongly encouraged to mention their review of COVID-19 effects on the company in the Statement of Actuarial Opinion, to demonstrate that it has not been overlooked or disregarded.

Actuaries may refer to the Statement of Actuarial Opinion Instructions, ASOPs, and Statutory Accounting Principles Working Group documents (particularly INT 20-08) for further instruction. The COVID-19 FAQ document, published by COPLFR and available on the American Academy of Actuaries website, can serve as an additional resource for practical consideration.

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III. Special interest topics

This appendix to the practice note contains more detailed information about specific topics that may not be common to all SAOs.

III.1 Unearned premium for Long Duration Contracts

This section discusses the special rules that apply to the unearned premium reserve calculation for certain long duration contracts.

According to the NAIC SAO Instructions,

> *"If the Scope includes material Unearned Premium Reserves for Long Duration Contracts or Other Loss Reserve items on which the Appointed Actuary is expressing an opinion, the Actuarial Opinion should contain language such as the following:*
>
> *D. Make a reasonable provision for the unearned premium reserves for long duration contracts and/or <insert Other Loss Reserve item on which the Appointed Actuary is expressing an Opinion> of the Company under the terms of its contracts and agreements."*[115]

The Appointed Actuary should opine on the unearned premium reserves for long duration contracts if the amount of those reserves are material.

III.1.1 Definitions

According to the NAIC SAO Instructions,

> *"Long Duration Contracts" refers to contracts (excluding financial guaranty contracts, mortgage guaranty contracts and surety contracts) that fulfill both of the following conditions: (1) the contract term is greater than or equal to thirteen months; and (2) the insurer can neither cancel the contract nor increase the premium during the contract term."*[116]

III.1.2 Discussion

For policies that meet the criteria provided in the above definition, SSAP 65 contains special rules for the calculation of the unearned premium reserves. These rules are found in SSAP 65, paragraphs 24-33, and

[115] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[116] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

consist of three UPR "tests" or steps. While not definitive, SSAP 65 does say that "*this guidance is primarily focused on home warranty and mechanical breakdown policies*".[117]

Given the complexity involved, the actuary may want to confirm whether certain policies meet the criteria for performing these calculations. In particular, the actuary may want to confirm that the policies in question do not have cancellation or repricing provisions that would exempt them from this calculation.

The three tests are essentially:

Test 1: The amount subject to refund to the contract holders as of the reporting date.

Test 2: The gross premium times the percentage of expected total gross losses and expenses under the contract that have yet to be incurred during the unexpired term of the contracts.

Test 3: *"[T]he projected future gross losses and expenses to be incurred during the unexpired term of the contracts [after specified adjustments], reduced by the present value of future guaranteed gross premiums, if any."*[118] This is very similar to a premium deficiency calculation.

These tests are applied to the three most recent policy years individually, with the highest of the three values recorded for each of those policy years. For all earlier policy years, all Test 1 results are aggregated, all Test 2 results are aggregated, and all Test 3 results are aggregated, with the largest of those aggregated results being the amount booked for those earlier years on a combined basis.

The adjustments made for Test 3 are to reflect future investment income, but with several limitations. Only investment income related to future incurred losses is considered, not investment income on already incurred losses. The time period for the calculation of the investment income is from the valuation date to the date of incurred losses on the current unexpired portion of a policy, not to the date that those future losses are paid. The interest rate used for this calculation is capped based on the company's portfolio and on 5-year Treasury Bonds. An additional cap exists to the extent that this test implies more invested assets than a company actually holds.

For tests 2 and 3, the projected losses may be reduced for expected salvage and subrogation, but not for anticipated deductible recoveries unless the recoveries are properly secured. According to SSAP No. 65, "*Projected salvage and subrogation (net of associated expenses) shall be established based on reporting entity experience, if credible; otherwise, based on industry experience.*"[119] SSAP No. 65 goes on further to say, *"The actuarial report shall include a description of the manner in which the adequacy of the amount of security for deductibles and self-insured retentions is determined."*[120]

[117] SSAP No. 65, paragraph 21 (Appendix IV).
[118] SSAP No. 65, paragraph 29 (Appendix IV).
[119] SSAP No. 65, paragraph 26 (Appendix IV).
[120] SSAP No. 65, paragraph 33 (Appendix IV).

The impact of ceded reinsurance is allowed to be reflected in the calculation of the net unearned premium reserves.

We refer the reader of this practice note to SSAP No. 65 for further details underlying the three Tests.

III.2 Intercompany pooling

It is a common practice for affiliated companies within an insurance group to pool business through an intercompany pooling agreement. Typically, one company in the pool assumes business from the other companies in the pool and then cedes the combined business (including its own business) back to the other companies, according to the percentage of their participation in the pool. This has a number of advantages, including simplified preparation of Annual Statements for the affiliated companies.

The NAIC Annual Statement Instructions for Schedule P require that direct plus assumed and ceded business be reported on a pooled basis. For companies within a group that pool all of their business, after external reinsurance, Schedule P is therefore identical for each company on a gross, ceded, and net basis, except that each company's Schedule P reflects its participation percentage. For a comprehensive example of how this works, the actuary may refer to the NAIC Instructions for Schedule P.

Since Schedule P gross and ceded premiums and losses reflect intercompany pooling transactions, gross and ceded premiums and losses for a pooled company are different in Schedule P as compared to the Underwriting and Investment Exhibits of the Annual Statement. For these companies, ceded reserves in Schedule P are also different from ceded reserves in Schedule F.

The Instructions provide that any retroactive change in intercompany pooling requires a restatement of Schedule P to reflect the current pooling agreement. A retroactive change in intercompany pooling among companies 100 percent owned by a common parent, which results in no gain in surplus, is not accounted for as retroactive reinsurance (see SSAP No. 63 and the *NAIC Accounting Practices and Procedures Manual*).

There are a number of impacts from intercompany pooling on reserve analyses and actuarial opinions. This section provides a discussion of these impacts in the order the impacts are addressed in the NAIC SAO Instructions.

III.2.1 Definitions

"Intercompany Pooling" in this context refers to business which is pooled among affiliated insurance companies who are party to a pooling agreement in which the participants receive a fixed and predetermined share of all business written by the pool. Intercompany pooling arrangements involve establishment of a conventional quota share reinsurance agreement under which all the pooled business is ceded to the lead entity and then retroceded back to the pool participants in accordance with their stipulated shares.

III.2.2 Discussion: Identification and disclosure of the pooling arrangement

Section 1C of the NAIC SAO Instructions was expanded in 2014 to apply to all companies that operate in an intercompany pooling agreement. Regardless of their participation percentage, companies participating in intercompany pooling arrangements are required to include a description of the pool, identification of the lead company, and a listing of all companies in the pool, their state(s) of domicile, and their respective pooling percentages in each of the SAOs.

If the composition of the pool, or a company's share of the pool, changed materially during the current year, the actuary may wish to comment on this by describing the change.

III.2.3 Discussion: Reserve analyses for pooled companies

For business that is part of a pooling agreement, the NAIC permits reserve analyses to be performed on a pooled basis, both gross and net of reinsurance. The following provides illustrative language that the actuary may wish to include in the SCOPE section of the SAO. We note that the first illustration is the same as that provided in section 3.3.2 of the practice note, repeated here for convenience.

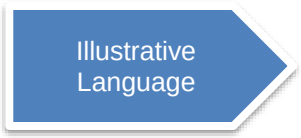
The Company is the lead member of an intercompany pooling agreement with its subsidiaries, DEF Insurance Company and GHI Insurance Company. Premiums and losses are allocated to the Company based on its assigned percentage to the total pool, XX%. Analysis of the reserve items identified in Exhibit A has been performed for all pool companies combined and allocated to the pool companies based on their pooling percentages. Any favorable or adverse development will affect pool members in a manner commensurate with their pool participation. The following is a listing of all companies in the pool, their respective pooling percentages, and their state of domicile: ….

OR

The Company is part of an intercompany pooling agreement with other affiliates of [name of group]. Premiums and losses are allocated to the Company based on its assigned percentage of the total pool. Analysis of the reserve items identified in Exhibit A has been performed for all pool companies combined and allocated to the pool companies based on their pooling percentages. The following is a listing of all companies in the pool, their respective pooling percentages, their state(s) of domicile, and an identification of the lead company: ….

III.2.4 Discussion: Reconciliation to Schedule P for pooled companies

If all business in the affiliated companies is part of the pooling agreement, the reconciliation of data to Schedule P, Part 1 can also be performed on a pooled basis. The actuary may wish to comment on this along the following lines when discussing reconciliation:



I also reconciled that data to a composite Schedule P – Part 1, comprising the total intercompany pool to which the Company belongs.

III.2.5 Discussion: Compilation of Exhibits A and B for pooled companies

Additionally, regardless of the company's participation percentage in the intercompany pool, each company is required to include Exhibits A and B reflecting its share. Companies having a zero percent share are required to include relevant comments that relate to the risks of the lead pool member and are required to file Exhibits A and B of the lead as an addendum to their SAOs.

III.2.6 Discussion: Actuarial Opinion Summary

The AOS Instructions pertaining to companies participating in intercompany pooling have been modified in 2014 to require the Appointed Actuary to state the company's intercompany pooling percentage.

In cases of intercompany pooling, the actuary often performs his or her analysis and draws his or her conclusions on the basis of total reserves. This information is usually described within the opinion. According to the AOS Instructions, for non-zero percent companies, the information provided for paragraph 5 of the AOS should be numbers after the company's share of the pool has been applied; specifically, the point or range comparison should be for each statutory company and should not be for the pool in total. However, for those companies whose participation percentage is zero, the information provided for paragraph 5 should be that of the lead company.

Note:

- Intercompany pooling agreements may create substantial cessions on Schedule F between members of the pool.
- A change in pooling percentage can cause a company to fail IRIS Tests, particularly the Estimated Current Reserve Deficiency to Surplus.

III.3 NAIC Guidance for Actuarial Opinions for Pools and Associations

The Casualty Actuarial and Statistical Task Force (CASTF) of the NAIC has provided guidance for a required SAO for Pools and Associations. This guidance document (a portion which is reproduced here), is for the convenience of the reader. Note that this document was last updated by the CASTF in September 2010 and, therefore, does not reflect the changes made by the NAIC in the Statement of Actuarial Opinion Instructions since.

September 2010

NAIC Guidance for Actuarial Opinions for Pools and Associations

Prepared by the
Casualty Actuarial & Statistical Task Force

A "Statement of Actuarial Opinion" (SAO) for Pools and Associations should be written in accordance with the NAIC Annual Statement Instructions Property and Casualty. The Casualty Actuarial & Statistical Task Force (CASTF) of the NAIC provides the following guidance to aid in writing a SAO for Pools and Associations. Note that the Actuarial Opinion Summary (AOS) does not apply to Pools and Associations.

The numbering in the following guidance corresponds to the numbering in the NAIC Annual Statement Instructions Property and Casualty.

1. The Board of Directors of the pool shall appoint a Qualified Actuary to write the SAO for the pool. The SAO shall be forwarded by the pool administrator to each pool member by January 31st of the succeeding year or as otherwise agreed by voluntary pool members.

1.A. Definitions

Pool member means an insurer authorized to write property and/or casualty insurance under the laws of any state, unless otherwise defined in state law, and includes but is not limited to fire and marine companies, general casualty companies, local mutual aid societies, statewide mutual assessment companies, mutual insurance companies other than farm mutual insurance companies and county mutual insurance companies, Lloyd's plans, reciprocal and interinsurance exchanges, captive insurance companies, risk retention groups, stipulated premium insurance companies, and nonprofit legal services corporations.

4. SCOPE Paragraph

The net reserves included in the SCOPE paragraph are net of reinsurance, other than cessions used to distribute the losses to pool members.

The SCOPE paragraph should indicate the accounting basis on which the entity is providing its financial information, the valuation date of data used in support of the opinion, and whether this data has been adjusted to reflect expected values as of December 31 of the calendar year for which the SAO is provided. Alternatively, if data reported by the entity is on a lagged basis, the number of months by which data is lagged should be noted.

Exhibit A should be modified to provide only those items relevant to Pools and Associations.

6. RELEVANT COMMENTS paragraphs

The Appointed Actuary must provide RELEVANT COMMENT paragraphs to address issues such as collectibility of assessments, the mechanism for recovering any pool deficits, or the nature of member's liability as part of the pool.

b. Other Disclosures in Exhibit B

Exhibit B should be modified to provide only those items relevant to Pools and Associations.

d. IRIS Ratios

In lieu of comments about IRIS ratios, if the entity's current reserves indicate adverse development of greater than 20% on reserve valuations established at the same date one year and/or two years prior, the actuary must include RELEVANT COMMENT on the factors that led to the unusual value(s) along with explanation.

III.4 Retroactive and financial reinsurance

This section provides additional detail on the topics of retroactive and financial reinsurance, beyond that discussed in sections 5.4 and 5.4.3 of the practice note.

According to the NAIC SAO Instructions,

> "*RELEVANT COMMENT paragraphs should address reinsurance collectability, retroactive reinsurance and financial reinsurance.*"[121]

The reference to retroactive reinsurance relates to contracts subject to retroactive reinsurance accounting, not to retroactive reinsurance contracts subject to prospective reinsurance accounting.

[121] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

III.4.1 Definitions

"Retroactive reinsurance refers to agreements referenced in SSAP No. 62R, Property and Casualty Reinsurance, of the NAIC Accounting Practices and Procedures Manual."[122]

For the purpose of the SAO this definition refers to retroactive reinsurance contracts subject to retroactive reinsurance accounting. Some retroactive reinsurance contracts instead are subject to prospective reinsurance accounting. Paragraph 31 of SSAP 62R lists those retroactive contracts subject to prospective reinsurance accounting:

- *Structured settlement annuities:* These are accounted for as reinsurance for GAAP purposes but as paid losses with contingent liabilities for statutory accounting purposes. See SSAP 65, paragraphs 17 through 19 for more information.
- *Novations*
- *The termination of, or reduction in participation in, reinsurance treaties entered into in the ordinary course of business*
- *Intercompany reinsurance agreements, and any amendments thereto, among companies 100% owned by a common parent or ultimate controlling person provided there is no gain in surplus as a result of the transaction*
- *Certain runoff agreements*: These are described in detail in paragraphs 80 through 83 of SSAP 62R.

"Financial reinsurance refers to contracts referenced in SSAP No. 62R [of the NAIC Accounting Practices and Procedures Manual] in which credit is not allowed for the ceding insurer because the arrangements do not include a transfer of both timing and underwriting risk that the reinsurer undertakes in fact to indemnify the ceding insurer against loss or liability by reason of the original insurance."[123]

III.4.2 Discussion: Retroactive Reinsurance

Retroactive reinsurance contracts discussed herein are only those subject to retroactive reinsurance accounting treatment.

Retroactive reinsurance contracts do not affect the losses reported in Schedule P or the Underwriting & Expense Exhibits, but they do affect the surplus of the parties involved. The loss reserves (ceded and assumed) for such contracts are reported separately as write-in liabilities (or contra-liabilities) on the balance sheet. For the ceding company, any surplus gain from the retroactive reinsurance is recorded as "special surplus" until (and to the extent that) it reflects actual reinsurance recoveries above reinsurance considerations paid. These "special surplus" amounts are recognized for RBC and other similar solvency evaluation purposes, but may not be available for dividend and similar purposes.

Since the contracts do not impact the loss schedules of the Annual Statement the financial impact of these contracts may not be readily apparent, requiring the use of different data sources or different reconciliation approaches. The contracts also will not impact reported loss development (and hence the

[122] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).
[123] *2021 NAIC Annual Statement Instructions Property/Casualty* (Appendix I.1).

risk of adverse loss development) that may be reported in Schedule P – Part 2, but do impact statutory surplus. As such, the actuary may want to evaluate and set the RMAD criteria in recognition of this situation. A RMAD focusing on changes to surplus will reflect the risk and impact of retroactive reinsurance, while one focusing on the risk to Schedule P reserves will not be impacted by retroactive reinsurance.

Note that retroactive reinsurance contracts have to pass risk transfer to qualify for reinsurance accounting treatment (prospective or retroactive). Contracts that don't meet risk transfer requirements will be accounted for as deposits.

An actuary that has access to both statutory and GAAP financial statements may benefit from knowing how GAAP accounting for such contracts differs from the statutory accounting. GAAP loss reserves will include the impact of retroactive reinsurance contracts, but any surplus gain that results will be amortized over time. Hence GAAP loss reserve disclosures will benefit from these contracts, but GAAP equity will have any benefit deferred.

III.4.3 Discussion: Financial Reinsurance

Financial reinsurance contracts are contracts that do not transfer sufficient risk so as to qualify for reinsurance accounting treatment. These contracts could be prospective or retroactive in nature (i.e., they could cover only claims incurred in the future, claims incurred in the past, or some combination of the two). The one constant is that these contracts are accounted for as deposits, with no impact on loss reserves and (normally) minimal impact on surplus.

These contracts were the subject of various investigations by both state insurance regulators and the SEC in the past due to the potential for such contracts to distort financial statements if not recorded as deposits. If recorded as deposits then these contracts should not impact the actuarial opinion analysis. If incorrectly reported then these contracts may understate the risk associated with the company's balance sheet.

The risk transfer analysis to determine if reinsurance or deposit accounting applies is discussed in SSAP 62R. It says that determining whether risk transfer exists "*requires a complete understanding of that contract and other contracts or agreements between the ceding entity and related reinsurers. A complete understanding includes an evaluation of all contractual features….*"[124] These include cancellation provisions, loss-sensitive features and investment income potential, not just undiscounted losses that may result from that contract.

[124] SSAP No. 62R, paragraph 12 (Appendix IV).

III.5 Pre-paid Loss Adjustment Expense

Third-party administrators (TPAs) often provide loss adjustment services on a fixed price basis to their insurance company customers. For example, a TPA may agree to handle all claims from Accident Year 20XX arising from a specific line of business or from a specific program -- for a fee of X% of the line's 20XX earned premium. These agreements often are "cradle to grave", providing for loss adjustment services into the future until all claims covered by the agreement are closed.

The 2021 *AOWG Regulatory Guidance states:*

> *"According to SSAP 55, Paragraph 5 of the NAIC's Accounting Practice and Procedures Manual, the liability for unpaid loss adjustment expenses shall be established regardless of any payments made to third-party administrators (TPA), management companies or other entities. The values should be recorded as loss adjustment expense reserves throughout the Annual Statement and not recorded as a write-in. Appointed Actuaries should be aware of any such arrangements, incorporate this consideration into their analysis, and include appropriate disclosures in the Opinion and the Actuarial Report."*[125]

FAQ: This requirement violates the economics of these situations. Our company has paid another organization to assume these costs. Why should we now set up an additional liability?

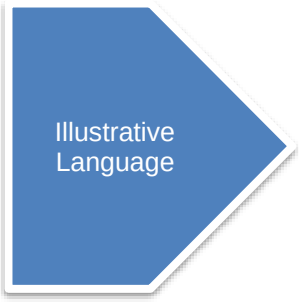
A: Statutory Accounting is often more conservative than GAAP accounting, and is often more conservative than the economic fundamentals of a situation would indicate. Regulators have taken a conservative approach to pre-paid loss adjustment expenses.

Statutory accounting requires the actuary to include a full reserve for these loss adjustment expenses, regardless of any amounts which have been pre-paid.

III.5.1 Illustrative language

Comments on pre-paid loss adjustment expenses should be included in the SAO, if this item is material. In addition, regulators will expect an appropriate discussion of this topic in the Actuarial Report.

[125] 2021 AOWG Regulatory Guidance (Appendix II).



The Company has an agreement with {name of TPA} to adjust all claims from the 20XX accident year from the {name of program or line of business}, until all of these claims have been closed. A pre-payment for these services has been made by the Company to {name of TPA}. Regardless of this pre-payment, the Company has established the liability for unpaid loss adjustment expenses and included this balance in the loss adjustment expenses reserves included in Exhibit A.

III.6 Guidance for Audit Committee Members of P/C Insurers

The following document was first published by COPLFR in 2007 and was updated in 2014 and 2020. It is reproduced here to assist practicing actuaries in communicating with a company's board of directors or audit committee concerning uncertainties in the process of estimating unpaid loss and loss adjustment expense claims liabilities. This document serves as an overview of loss reserves for an Audit Committee of a Board, and may serve as reference for the Appointed Actuary when assembling materials for a presentation to a board or audit committee.

IV. SSAPs

The following documents are the Statement of Statutory Accounting Principles.

SSAP 5R: *Liabilities, Contingencies and Impairment of Assets*
SSAP 9: *Subsequent Events*
SSAP 29: *Prepaid Expenses*
SSAP 53: *Property Casualty Contracts - Premiums*
SSAP 55: *Unpaid Claims, Losses and Loss Adjustment Expenses*
SSAP 57: *Title Insurance*
SSAP 58: *Mortgage Guaranty Insurance*
SSAP 62R: *Property and Casualty Reinsurance*
SSAP 63: *Underwriting Pools and Associations Including Intercompany Pools*
SSAP 65: *Property and Casualty Contracts*
SSAP 66: *Retrospectively Rated Contracts*

Statement of Statutory Accounting Principles No. 5 - Revised

Liabilities, Contingencies and Impairments of Assets

STATUS

Type of Issue	Common Area
Issued	Initial draft; Substantively revised October 18, 2010
Effective Date	January 1, 2001; Substantive revisions December 31, 2011
Affects	Nullifies and incorporates INT 04-01 and INT 08-06
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement defines and establishes statutory accounting principles for liabilities, contingencies and impairments of assets.

SUMMARY CONCLUSION

Liabilities

2. A liability is defined as certain or probable[1] future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or to provide services to other entities in the future as a result of a past transaction(s) or event(s).

[1] *FASB Statement of Financial Accounting Concepts No. 6, Elements of Financial Statements*, states: Probable is used with its usual general meaning, rather than in a specific accounting or technical sense (such as that in *FASB Statement 5, Accounting for Contingencies*, paragraph 3), and refers to that which can reasonably be expected or believed on the basis of available evidence or logic but is neither certain nor proved.

3. A liability has three essential characteristics: (a) it embodies a present duty or responsibility to one or more other entities that entails settlement by probable[1] future transfer or use of assets at a specified or determinable date, on occurrence of a specified event, or on demand, (b) the duty or responsibility obligates a particular entity, leaving it little or no discretion to avoid the future sacrifice, and (c) the transaction or other event obligating the entity has already happened. This includes, but is not limited to, liabilities arising from policyholder obligations (e.g., policyholder benefits, reported claims and reserves for incurred but not reported claims). Liabilities shall be recorded on a reporting entity's financial statements when incurred.

4. Estimates (e.g., loss reserves) are required in financial statements for many ongoing and recurring activities of a reporting entity. The mere fact that an estimate is involved does not of itself constitute a loss contingency. For example, estimates of losses utilizing appropriate actuarial methodologies meet the definition of liabilities as outlined above and are not loss contingencies.

Joint and Several Liabilities

5. Joint and several liability arrangements for which the total obligation amount under the arrangement is fixed[2] at the reporting dates shall be measured and reported as the sum of:

a. The amount the reporting entity agreed to pay on the basis of the agreements among its co-obligors, and

b. Any additional amount the reporting entity expects to pay on behalf of its co-obligors. When an amount within management's estimate of the range of a loss appears to be a better estimate than any other amount within the range, that amount shall be the additional amount included in the measurement of the obligation. If no amount within the range is a better estimate than any other amount, then the midpoint shall be used.

Loss Contingencies or Impairments of Assets

6. For purposes of implementing the statutory accounting principles of loss contingency or impairment of an asset described below, the following additional definitions shall apply:

a. Probable—The future event or events are likely to occur;

b. Reasonably Possible—The chance of the future event or events occurring is more than remote but less than probable;

c. Remote—The chance of the future event or events occurring is slight.

7. A loss contingency or impairment of an asset is defined as an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an enterprise that will ultimately be resolved when one or more future event(s) occur or fail to occur (e.g., collection of receivables).

8. An estimated loss from a loss contingency or the impairment of an asset shall be recorded by a charge to operations if both of the following conditions are met:

a. Information available prior to issuance of the statutory financial statements indicates that it is probable that an asset has been impaired or a liability has been incurred at the date of the statutory financial statements. It is implicit in this condition that it is probable that one

[2] Examples of items within the scope of this guidance include debt arrangements, other contractual obligations, and settled judicial litigation and judicial rulings. Loss contingencies, guarantees, pension and other postretirement benefit obligations and taxes are excluded from this guidance and shall be accounted for under the statutory accounting provisions specific to those topics.

or more future events will occur confirming the fact of the loss or incurrence of a liability; and

b. The amount of loss can be reasonably estimated.

9. This accounting shall be followed even though the application of other prescribed statutory accounting principles or valuation criteria may not require, or does not address, the recording of a particular liability or impairment of an asset (e.g., a known impairment of a bond even though the VOS manual has not recognized the impairment).

10. Additionally, in instances where a judgment, assessment or fine has been rendered against a reporting entity, there is a presumption that the criteria in paragraph 8.a. and 8.b. have been met. A judgment is considered "rendered" when a court enters a verdict, notwithstanding the entity's ability to file post-trial motions and to appeal. The amount of the liability shall include the anticipated settlement amount, legal costs, insurance recoveries and other related amounts and shall take into account factors such as the nature of the litigation, progress of the case, opinions of legal counsel, and management's intended response to the litigation, claim, or assessment.

11. When the condition in paragraph 8.a. is met with respect to a particular loss contingency, and the reasonable estimate of the loss is a range, which meets the condition in paragraph 8.b., an amount shall be accrued for the loss. When an amount within management's estimate of the range of a loss appears to be a better estimate than any other amount within the range, that amount shall be accrued. When, in management's opinion, no amount within management's estimate of the range is a better estimate than any other amount, however, the midpoint (mean) of management's estimate in the range shall be accrued. For purposes of this paragraph, it is assumed that management can quantify the high end of the range. If management determines that the high end of the range cannot be quantified, then a range does not exist, and management's best estimate shall be used.

12. The use of the midpoint in a range will be applicable only in the rare instance where there is a continuous range of possible values, and no amount within that range is any more probable than any other. This guidance is not applicable when there are several point estimates which have been determined as equally possible values, but those point estimates do not constitute a range. If there are several point estimates with equal probabilities, management should determine their best estimate of the liability.

Tax Contingencies

13. As directed by SSAP No. 101, tax loss contingencies (including related interest and penalties) for current and all prior years, shall be computed in accordance with this SSAP, with the following modifications:

a. The term "probable" as used in this standard shall be replaced by the term "more likely than not (a likelihood of more than 50 percent)" for federal and foreign income tax loss contingencies only.

b. For purposes of the determination of a federal and foreign income tax loss contingency, it shall be presumed that the reporting entity will be examined by the relevant taxing authority that has full knowledge of all relevant information.

c. If the estimated tax loss contingency is greater than 50 percent of the tax benefit originally recognized, the tax loss contingency recorded shall be equal to 100 percent of the original tax benefit recognized.

As noted in SSAP No. 101, state taxes (including premium, income and franchise taxes) shall also be computed in accordance with this SSAP. These items (as detailed in SSAP No. 101) are not impacted by the modifications detailed in paragraphs 13.a.-13.c.

Gain Contingencies

14. A gain is defined as an increase in surplus which results from peripheral or incidental transactions of a reporting entity and from all other transactions and other events and circumstances affecting the reporting entity except those that result from revenues or investments by owners. If, on or before the balance sheet date, (a) the transaction or event has been fully completed, and (b) the amount of the gain is determinable, then the transaction or event is considered a gain, and is recognized in the financial statements. The definition of a gain excludes increases in surplus that result from activities that constitute a reporting entity's ongoing major or central operations or activities. Because investment activities are central to an insurer's operations, increases in surplus that result from such investment activities are excluded from the definition of gains. Revenues are inflows or other enhancements of assets of a reporting entity or settlements of its liabilities (or a combination of both) from providing products, rendering services, or other activities that constitute the reporting entity's ongoing major or central operations. Investments by owners include any type of capital infused into the surplus of the reporting entity.

15. A gain contingency is defined as an existing condition, situation, or set of circumstances involving uncertainty as to possible gain (as defined in the preceding paragraph) to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur (e.g., a plaintiff has filed suit for damages associated with an event occurring prior to the balance sheet, but the outcome of the suit is not known as of the balance sheet date). Gain contingencies shall not be recognized in a reporting entity's financial statements. However, if subsequent to the balance sheet date but prior to the issuance of the financial statements, the gain contingency is realized, the gain shall be disclosed in the notes to financial statements and the unissued financial statements should not be adjusted to record the gain. A gain is generally considered realizable when noncash resources or rights are readily convertible to known amounts of cash or claims to cash.

Guarantees

16. A guarantee contract is a contract that contingently requires the guarantor to make payments (either in cash, financial instruments, other assets, shares of its stock, or provision of services) to the guaranteed party based on changes in the underlying that is related to an asset, a liability, or an equity security of the guaranteed party. Commercial letters of credit and loan commitments, by definition, are not considered guarantee contracts. Also excluded from the definition are indemnifications or guarantees of an entity's own performance, subordination arrangements or a noncontingent forward contract. This definition could include contingent forward contracts if the characteristics of this paragraph are met.

17. The following guarantee contracts are not subject to the guidance in paragraphs 20-26~~25~~ and paragraphs ~~29-32~~33-36:

a. Guarantees already excluded from the scope of SSAP No. 5R;

b. Guarantee contracts accounted for as contingent rent;

c. Insurance contract guarantees, including guarantees embedded in deposit-type contracts;

d. Contracts that provide for payments that constitute a vendor rebate by the guarantor based on either the sales revenue or the number of units sold by the guaranteed party;

e. A guarantee or indemnification whose existence prevents the guarantor from being able to either account for a transaction as the sale of an asset that is related to the guarantee's underlying or recognize in earnings the profit from that sale transaction;

f. Registration payment arrangements; and

g. A guarantee that is accounted for as a credit derivative instrument at fair value under SSAP No. 86, as described in paragraph ~~59~~61.e. of SSAP No. 86.

18. The following types of guarantees are exempted from the initial liability recognition in paragraphs 20-26~~25~~, but are subject to the disclosure requirements in paragraphs ~~29-32~~33-36:

a. Guarantee that is accounted for as a derivative instrument, other than credit derivatives within SSAP No. 86;

b. Guarantee for which the underlying is related to the performance of nonfinancial assets that are owned by the guaranteed party, including product warranties;

c. Guarantee issued in a business combination that represents contingent consideration;

d. Guarantee in which the guarantor's obligation would be reported as an equity item;

e. Guarantee by an original lessee that has become secondarily liable under a new lease that relieved the original lessee from being the primary obligator;

f. Guarantees (as defined in paragraph 16) made to/or on behalf of directly or indirectly wholly-owned insurance or non-insurance subsidiaries[3]; and

g. Intercompany and related party guarantees that are considered "unlimited" (e.g., typically in response to a rating agency's requirement to provide a commitment to support).

The exemptions for paragraphs 18.f. and 18.g. do not apply in situations in which a reporting entity has provided a financial guarantee or commitment to support a subsidiary, controlled or affiliated entity (SCA), and the SCA's equity is negative (see paragraph 25).

19. With the exception of the provision for guarantees made to/or on behalf of a wholly-owned subsidiaries in paragraph 18.f. and "unlimited" guarantees in 18.g., this guidance does not exclude guarantees issued as intercompany transactions or between related parties from the initial liability recognition requirement. Thus, unless the guarantee is provided on behalf of a wholly-owned subsidiary or considered "unlimited," guarantees issued between the following parties are subject to the initial recognition and disclosure requirements:

a. Guarantee issued either between parents and their subsidiaries or between corporations under common control;

b. A parent's guarantee of its subsidiary's debt to a third party; and

c. A subsidiary's guarantee of the debt owed to a third party by either its parent or another subsidiary of that parent.

20. At the inception of a guarantee, the guarantor shall recognize in its statement of financial position a liability for that guarantee. Except as indicated in paragraph 22, the objective of the initial measurement of the liability is the fair value[4] of the guarantee at its inception.

[3] The exclusion for wholly-owned subsidiaries includes guarantees from a parent to, or on behalf of, a direct wholly-owned insurance or non-insurance subsidiary as well as guarantees made from a parent to, or on behalf of, an indirect wholly-owned insurance or non-insurance subsidiary. The "wholly-owned" exclusion in paragraph 18.f. does not include guarantees issued from one subsidiary to another subsidiary, regardless if both subsidiaries are wholly-owned (directly or indirectly) by a parent company.

[4] As practical expedients, when a guarantee is issued in a standalone arm's-length transaction, the liability recognized at the inception of the guarantee should be the premium received or receivable by the guarantor. When a guarantee is issued as part of a

21. The issuance of a guarantee obligates the guarantor (the issuer) in two respects: (a) the guarantor undertakes an obligation to stand ready to perform over the term of the guarantee in the event that the specified triggering events or conditions occur (the noncontingent aspect) and (b) the guarantor undertakes a contingent obligation to make future payments if those triggering events or conditions occur (the contingent aspect). Because the issuance of a guarantee imposes a noncontingent obligation to stand ready to perform in the event that the specified triggering event occurs, the provisions of paragraph 8 should not be interpreted as prohibiting the guarantor from initially recognizing a liability for that guarantee even though it is not probable that payments will be required under that guarantee.

22. In the event that, at the inception of the guarantee, the guarantor is required to recognize a liability under paragraph 8 for the related contingent loss, the liability to be initially recognized for that guarantee shall be the greater of (a) the amount the satisfies the fair value objective as discussed in paragraph 20 or (b) the contingent liability amount required to be recognized at inception of the guarantee by paragraph 8. For many guarantors, it would be unusual for the contingent liability under (b) to exceed the amount that satisfies the fair value objective at the inception of the guarantee.

23. The offsetting entry pursuant to the liability recognition at the inception of the guarantee depends on the circumstances in which the guarantee was issued. Examples include:

a. If the guarantee was issued in a standalone transaction for a premium, the offsetting entry would the consideration received.

b. If the guarantee was issued in conjunction with the sale of assets, a product, or a business, the overall proceeds would be allocated between the consideration being remitted to the guarantor for issuing the guarantee and the proceeds from that sale. That allocation would affect the calculation of the gain or loss on the sale transaction.

c. If a residual value guarantee were provided by a lessee-guarantor when entering into an operating lease, the offsetting entry would be reflected as prepaid rent, which would be nonadmitted under SSAP No. 29.

d. If a guarantee were issued to an unrelated or related party for no consideration on a standalone basis, the offsetting entry would be to expense.

24. Except for the measurement and recognition of continued guarantee obligations after the settlement of a contingent guarantee liability described in paragraph ~~25~~26, this standard does not describe in detail how the guarantor's liability for its obligations under the guarantee would be measured subsequent to initial recognition. The liability that the guarantor initially recognized in accordance with paragraph 20 would typically be reduced (as a credit to income) as the guarantor is released from risk under the guarantee. Depending on the nature of the guarantee, the guarantor's release from risk has typically been recognized over the term of the guarantee (a) only upon either expiration or settlement of the guarantee, (b) by a systematic and rational amortization method, or (c) as the fair value of the guarantee changes (for example, guarantees accounted for as derivatives). The reduction of liability does not encompass the recognition and subsequent adjustment of the contingent liability recognized under paragraph 8 related to the contingent loss for the guarantee. If the guarantor is required to subsequently recognize a contingent liability for the guarantee, the guarantor shall eliminate any remaining noncontingent liability for that guarantee and recognize a contingent liability in accordance with paragraph 8.

25. In situations in which a reporting entity has provided a financial guarantee or commitment to support a subsidiary, controlled or affiliated entity (SCA), and the reporting entity's share of losses in the

transaction with multiple elements, the liability recognized at the inception of the guarantee should be an estimate of the guarantee's fair value. In that circumstance, guarantors should consider what premium would be required by the guarantor to issue the same guarantee in a standalone arm's-length transaction.

SCA exceed the equity method carrying amount of the SCA (resulting in a negative equity value in the SCA), the reporting entity shall recognize the greater impact of (i) the then-current fair value liability for the guarantee, or (ii) the negative equity position, limited to the maximum amount of the financial guarantee or commitment provided by the reporting entity. (This guidance requires the recognition of a guarantee liability for guarantees captured in paragraphs 18.f. and 18.g. when negative equity exists in an SCA.) The guidance in paragraphs 20 through 26 shall be followed for the recognition of a contingent liability and a noncontingent liability, as applicable.

~~25.~~26. After recognition and settlement of a contingent guarantee liability in accordance with paragraph 8, a guarantor shall assess whether remaining potential obligations exist under the guarantee agreement. If the guarantor still has potential obligations under the guarantee contract, the guarantor shall recognize the remaining noncontingent guarantee that represents the current fair value of the potential obligation remaining under the guarantee agreement. This noncontingent guarantee liability shall be released in accordance with paragraph 24.

Financial Instruments with Characteristics of Both Liabilities and Equity

27. Issued, free-standing financial instruments with characteristics of both liability and equity shall be reported as a liability to the extent the instruments embodies an unconditional obligation of the issuer. (Pursuant to SSAP No. 86, embedded features in derivative contracts shall not be separated from the host contract for separate recognition.) Free-standing financial instruments that meet any of the criteria below meet the definition of a liability:

a. A mandatorily redeemable financial instrument shall be classified as a liability unless the redemption is required to occur only upon the liquidation or termination of the issuing reporting entity.

b. A financial instrument, other than an outstanding share, that at inception both: 1) embodies an obligation to repurchase the issuer's equity shares or is indexed to such an obligation, and 2) requires or may require the issuer to settle the obligation by transferring assets.

c. Obligations that permit the holder to require the issuer to transfer assets.

d. A financial instrument is a liability if the issuer must settle the obligation by issuing a variable number of its equity shares and the obligation's monetary value is based solely or predominantly on: 1) a fixed monetary amount, 2) variation in something other than the fair value of the issuer's equity shares, or 3) variations inversely related to changes in the fair value of the issuer's equity shares.

e. Instruments in which the counterparty (holder) is not exposed to the risks and benefits that are similar to those of a holder of an outstanding share of the entity's equity shall be classified as a liability.

28. If a free-standing financial instrument will be redeemed only upon the occurrence of a conditional event, redemption of that instrument is conditional and, therefore, the instrument does not meet the definition of mandatorily redeemable financial instrument. However, that financial instrument shall be assessed each reporting period to determine whether circumstances have changed such that the instrument meets the definition of a mandatorily redeemable instrument (that is, the event is no longer conditional). If the event has occurred, the condition is resolved, or the event has become certain to occur, the financial instrument shall be reclassified as a liability.

29. The classification of a free-standing financial instrument as a liability or equity shall only apply to the instrument issuer. Holders or purchasers of such instruments shall refer to the appropriate investment statement for valuation and reporting.

Disclosures

~~26.~~30. Disclose the following information for each joint and several liability arrangements accounted for under paragraph 5. If co-obligors are related parties, disclosure requirements in *SSAP No. 25—Affiliates and Other Related Parties* also apply.

a. The nature of the arrangement including: 1) how the liability arose, 2) the relationship with co-obligors, and 3) the terms and conditions of the arrangements.

b. The total outstanding amount under the arrangement, which shall not be reduced by the effect of any amounts that may be recoverable from other entities.

c. The carrying amount, if any, of the entity's liability and the carrying amount of a receivable recognized, if any.

d. The nature of any recourse provisions that would enable recovery from other entities of the amounts paid, including any limitations on the amounts that might be recovered.

e. In the period the liability is initially recognized and measured or in a period the measurement changes significantly: 1) the corresponding entry, and 2) where the entry was recorded in the financial statements.

~~27.~~31. If a loss contingency or impairment of an asset is not recorded because only one of the conditions in paragraph 8.a. or 8.b. is met, or if exposure to a loss exists in excess of the amount accrued pursuant to the provisions described above, disclosure of the loss contingency or impairment of the asset shall be made in the financial statements when there is at least a reasonable possibility that a loss or an additional loss may have been incurred. The disclosure shall indicate the nature of the contingency and shall give an estimate of the possible loss or range of loss or state that such an estimate cannot be made. (Disclosures for tax contingencies as identified in paragraph 13 shall be completed as instructed within SSAP No. 101.)

~~28.~~32. Disclosure is not required of a loss contingency involving an unasserted claim or assessment when there has been no manifestation by a potential claimant of an awareness of a possible claim or assessment unless it is considered probable that a claim will be asserted and there is a reasonable possibility that the outcome will be unfavorable.

~~29.~~33. Certain loss contingencies, the common characteristic of each being a guarantee, shall be disclosed in financial statements even though the possibility of loss may be remote. Examples include (a) guarantees of indebtedness of others, and (b) guarantees to repurchase receivables (or, in some cases, to repurchase related properties) that have been sold or otherwise assigned. The disclosure of those loss contingencies, and others that in substance have the same characteristics, shall be applied to statutory financial statements. The disclosure shall include the nature and amount of the guarantee. Consideration shall be given to disclosing, if estimable, the value of any recovery that could be expected to result, such as from the guarantor's right to proceed against an outside party.

~~30.~~34. A guarantor shall disclose the following information about each guarantee, or each group or similar guarantees (except product warranties addressed in paragraph ~~32~~36), even if the likelihood of the guarantor's having to make any payments under the guarantee is remote. In addition, the nature of the relationship to the beneficiary of the guarantee or undertaking (affiliated or unaffiliated) shall also be disclosed:

a. The nature of the guarantee, including the approximate term of the guarantee, how the guarantee arose, and the events and circumstances that would require the guarantor to perform under the guarantee, the ultimate impact to the financial statements (specific financial statement line item) after the settlement of the contract guarantee if action under the guarantee was required (e.g., increase to the investment, dividends to stockholder, etc.) and the current status (that is, as of the date of the statement of financial position) of the payment/performance risk of the guarantee. For example, the current status of the payment/performance risk of a credit-risk-related guarantee could be based on either recently issued external credit ratings or current internal groupings used by the guarantor to manage its risk. An entity that uses internal groupings shall disclose how those groupings are determined and used for managing risk.

b. The potential amount of future payments (undiscounted) the guarantor could be required to make under the guarantee. That maximum potential amount of future payments shall not be reduced by the effect of any amounts that may possibly be recovered under recourse or collateralization provisions in the guarantee (which are addressed under (d) below). If the terms of the guarantee provide for no limitation to the maximum potential future payments under the guarantee, that fact shall be disclosed. If the guarantor is unable to develop an estimate of the maximum potential amount of future payments under its guarantee, the guarantor shall disclose the reasons why it cannot estimate the maximum potential amount.

c. The current carrying amount of the liability, if any, for the guarantor's obligations under the guarantee (including the amount, if any, recognized under paragraph 8), regardless of whether the guarantee is freestanding or embedded in another contract.

d. The nature of (1) any recourse provisions that would enable the guarantor to recover from third parties any of the amounts paid under the guarantee and (2) any assets held either as collateral or by third parties that, upon the occurrence of any triggering event or condition under the guarantee, the guarantor can obtain and liquidate to recover all or a portion of the amounts paid under the guarantee. The guarantor shall indicate, if estimable, the approximate extent to which the proceeds from liquidation of those assets would be expected to cover the maximum potential amount of future payments under the guarantee.

~~31.~~35. An aggregate compilation of guarantee obligations shall include the maximum potential of future payments of all guarantees (undiscounted), the current liability (contingent and noncontingent) reported in the financial statements, and the ultimate financial statement impact based on maximum potential payments (undiscounted) if performance under those guarantees had been triggered.

~~32.~~36. As product warranties are excluded from the initial recognition and initial measurement requirements for guarantees, a guarantor is not required to disclose the maximum potential amount of future payments. Instead the guarantor is required to disclose for product warranties the following information:

a. The guarantor's accounting policy and methodology used in determining its liability for product warranties (Including any liability associated with extended warranties).

b. A tabular reconciliation of the changes in the guarantor's aggregate product warranty liability for the reporting period. That reconciliation should present the beginning balance of the aggregate product warranty liability, the aggregate reductions in that liability for payments made (in cash or in kind) under the warranty, the aggregate changes in the liability for accruals related to product warranties issued during the reporting period, the aggregate changes in the liability for accruals related to preexisting warranties (including adjustments related to changes in estimates), and the ending balance of the aggregate product warranty liability.

~~33.~~37. The financial statements shall contain adequate disclosure about the nature of any gain contingency. However, care should be exercised to avoid misleading implications as to the likelihood of realization.

~~34.~~38. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

~~35.~~39. This statement adopts *FASB Statement No. 5, Accounting for Contingencies* (FAS 5), *FASB Statement 114, Accounting by Creditors for Impairment of a Loan* only as it amends in part FAS 5 and paragraphs 35 and 36 of *FASB Statement of Financial Accounting Concepts No. 6—Elements of Financial Statements. FASB Interpretation No. 14, Reasonable Estimation of the Amount of a Loss, An Interpretation of FASB Statement No. 5* (FIN No. 14) is adopted with the modification to accrue the loss amount as the midpoint of the range rather than the minimum as discussed in paragraph 3 of FIN No. 14. This statement adopts with modification *ASU 2013-04, Obligations Resulting from Joint and Several Liability Arrangements for Which the Total Amount of the Obligation is Fixed at the Reporting Date* with the same statutory modification adopted for FIN 14.

~~36.~~40. This statement adopts with modification *FASB Interpretation No. 45: Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others, an interpretation of FASB Statements No. 5, 57, and 107 and rescission of FASB Interpretation No. 34* (FIN 45), *FASB Interpretation No. 45-3, Application of FASB Interpretation No. 45 to Minimum Revenue Guarantees Grated to a Business or Owner* (FSP FIN 45-3)*, and FASB Staff Position FAS 133-1 and FIN 45-4, Disclosures about Credit Derivatives and Certain Guarantees, An Amendment of FASB Statement No. 133 and FASB Interpretation No. 45* (FSP FAS 133-1 and FIN 45-4)*.* Statutory Modifications to FIN 45 include initial liability recognition for guarantees issued as part of intercompany or related party transactions, assessment and recognition of non-contingent guarantee obligations after recognition and settlement of a contingent obligation and revise the GAAP guidance to reflect statutory accounting terms and restrictions. Under this statement, intercompany and related party guarantees (including guarantees between parents and subsidiaries) should have an initial liability recognition unless the guarantee is considered "unlimited" or is made to/or on behalf of a wholly-owned subsidiary. (An example of an intercompany "unlimited" guarantee would be a guarantee issued in response to a rating agency's requirement to provide a commitment to support.) In instances in which an "unlimited" guarantee exists or a guarantee has been made to/or on behalf of a wholly-owned subsidiary, this statement requires disclosure, pursuant to the disclosure requirements adopted from FIN 45. The adoption of FIN 45 superseded the previously adopted guidance *in FASB Interpretation No. 34, Disclosure of Indirect Guarantees of Indebtedness of Others, An interpretation of FASB Statement No. 5.* This statement also adopts Accounting Principles Board Opinion No. 12, Omnibus Opinion—1967, paragraphs 2 and 3 with the modification that AVR, IMR and Schedule F Penalty shall be shown gross. Appropriation of retained earnings discussed in paragraph 15 of FAS 5 is addressed in *SSAP No. 72—Surplus and Quasi-Reorganizations.*

~~37.~~41. This statement adopts with modification the guidance in paragraphs 7-11 of *FSP EITF 00-19-2, Accounting for Registration Payment Arrangements*. This guidance specifies that the contingent obligation to make future payments or otherwise transfer consideration under a registration payment

arrangement, whether issued as a separate agreement or included as a provision for a financial instrument, other agreement, should be separately recognized and measured in accordance with *FAS 5, Accounting for Contingencies*. The guidance in FSP EITF 00-19-2 is modified as follows:

a. Registration payment arrangements meet the definition of a loss contingency in accordance with paragraph 7.

b. Financial instruments shall be accounted for in accordance with the statutory accounting principles for that specific asset type. Registration payment arrangement obligations shall be separate from the measurement and recognition of financial instruments subject to such arrangements.

c. Transition revisions resulting from application of this guidance shall be accounted for as a change in accounting principle pursuant to *SSAP No. 3—Accounting Changes and Corrections of Errors*. In accordance with SSAP No. 3, the cumulative effect of changes in accounting principles shall be reported as adjustments to unassigned funds in the period of change in the accounting principles.

Effective Date and Transition

~~38.~~42. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

~~39.~~43. The guidance in paragraph 10 related to when a judgment is considered rendered was originally contained in *INT 04-05: Clarification of SSAP No. 5R Guidance on when a Judgment is Deemed Rendered* and was effective September 12, 2004. The guidance for guarantees included within paragraphs 16-26~~25~~ and ~~30-32~~34-36 shall be applicable to all guarantees issued or outstanding as of December 31, 2011. Thereafter, disclosure of all guarantees shall be annually reported, with interim reporting required for new guarantees issued, and/or existing guarantees when significant changes are made. Guidance in paragraph ~~37~~41 was previously reflected within *INT 08-06: FSP EITF 00-19-2, Accounting for Registration Payment Arrangements* and was effective September 22, 2008.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 5—Definition of Liabilities, Loss Contingencies and Impairments of Assets*
- *Issue Paper No. 20—Gain Contingencies*
- *Issue Paper No. 135—Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others*

Statement of Statutory Accounting Principles No. 9

Subsequent Events

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	No other pronouncements
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement defines subsequent events and establishes the criteria for recording such events in the financial statements and/or disclosing them in the notes to the financial statements. The conclusions in this statement apply to both quarterly and annual statement filings.

SUMMARY CONCLUSION

Key Terms

2. Subsequent events shall be defined as events or transactions that occur subsequent to the balance sheet date, but before the issuance of the statutory financial statements and before the date the audited financial statements are issued, or available to be issued. The issuance of the statutory financial statements includes not only the submission of the quarterly and annual statement but also the issuance of the audit opinion by the reporting entity's certified public accountant.

3. Material subsequent events shall be considered either:

   a. Type I – Recognized Subsequent Events: Events or transactions that provide additional evidence with respect to conditions that existed at the date of the balance sheet, including the estimates inherent in the process of preparing financial statements;

b. Type II – Nonrecognized Subsequent Events: Events or transactions that provide evidence with respect to conditions that did not exist at the balance sheet date but arose after that date.

4. **Financial statements are issued:** Financial statements are considered issued when they are widely distributed to shareholders and other financial statement users for general use and reliance in a form and format that complies with SAP.

5. **Financial statements are available to be issued:** Financial statements are considered available to be issued when they are complete in a form and format that complies with SAP and all approvals necessary for issuance have been obtained, for example, from management, the board of directors, and/or significant shareholders. The process involved in creating and distributing the financial statements will vary depending on an entity's management and corporate governance structure as well as statutory and regulatory requirements. An entity that has a current expectation of widely distributing its financial statements to its shareholders and other financial statement users shall evaluate subsequent events through the date that the financial statements are issued. All other entities shall evaluate subsequent events through the date that the financial statements are available to be issued.

Recognition Guidance

6. An entity shall recognize in the financial statements the effects of all material Type I subsequent events that provide additional evidence about conditions that existed at the date of the balance sheet, including the estimates inherent in the process of preparing financial statements. Any changes in estimates resulting from the use of such evidence shall be recorded in the financial statements unless specifically prohibited, (e.g., subsequent collection of agents balances over 90 days due when determining nonadmitted agents balances as prohibited by *SSAP No. 6—Uncollected Premium Balances, Bills Receivable for Premiums, and Amounts Due From Agents and Brokers*).

7. For material Type I subsequent events, the nature and the amount of the adjustment shall be disclosed in the notes to the financial statements only if necessary to keep the financial statements from being misleading.

8. Material Type II subsequent events shall not be recorded in the financial statements, but shall be disclosed in the notes to the financial statements. For such events, an entity shall disclose the nature of the event and an estimate of its financial effect, or a statement that such an estimate cannot be made.

9. An entity also shall consider supplementing the historical financial statements with pro forma financial data. Occasionally, a nonrecognized subsequent event may be so significant that disclosure can best be made by means of pro forma financial data. Such data shall give effect to the event as if it had occurred on the balance sheet date. In some situations, an entity also shall consider presenting pro forma statements. If an event is of such a nature that pro forma disclosures are necessary to keep the financial statements from being misleading, disclosure of supplemental pro forma financial data shall be made including the impact on net income, surplus, total assets, and total liabilities giving effect to the event as if it had occurred on the date of the balance sheet.

10. Identifying events that require adjustment of the financial statements under the criteria stated in the conclusion calls for the management of the entity to exercise judgment and accumulate knowledge of the facts and circumstances surrounding the event. For example, a loss on an uncollectible agent's balance as a result of an agent's deteriorating financial condition leading to bankruptcy subsequent to the balance sheet date would be indicative of conditions existing at the balance sheet date, thereby requiring the recording of such event to the financial statements before their issuance. On the other hand, a similar loss resulting from an agent's major casualty loss such as a fire or flood subsequent to the balance sheet date would not be indicative of conditions existing at the balance sheet date and recording of the event to the

financial statements would not be appropriate. However, this is a Type II subsequent event which would require disclosure in the notes to the financial statements.

11. The following are examples of Type I recognized subsequent events:

a. If the events that gave rise to litigation had taken place before the balance sheet date and that litigation is settled, after the balance sheet date but before the financial statements are issued or are available to be issued, for an amount different from the liability recorded in the accounts, then the settlement amount should be considered in estimating the amount of liability recognized in the financial statements at the balance sheet date.

b. Subsequent events affecting the realization of assets, such as receivables and inventories or the settlement of estimated liabilities, should be recognized in the financial statements when those events represent the culmination of conditions that existed over a relatively long period of time. For example, a loss on an uncollectible trade account receivable as a result of a customer's deteriorating financial condition leading to bankruptcy after the balance sheet date but before the financial statements are issued or are available to be issued ordinarily will be indicative of conditions existing at the balance sheet date. Thus, the effects of the customer's bankruptcy filing shall be considered in determining the amount of uncollectible trade accounts receivable recognized in the financial statements at the balance sheet date.

12. The following are examples of Type II nonrecognized subsequent events:

a. Sale of a bond or capital stock issued after the balance sheet date but before financial statements are issued or are available to be issued

b. A business combination that occurs after the balance sheet date but before financial statements are issued or are available to be issued

c. Settlement of litigation when the event giving rise to the claim took place after the balance sheet date but before financial statements are issued or are available to be issued

d. Loss of plant or inventories as a result of fire or natural disaster that occurred after the balance sheet date but before financial statements are issued or are available to be issued

e. Losses on receivables resulting from conditions (such as a customer's major casualty) arising after the balance sheet date but before financial statements are issued or are available to be issued

f. Changes in the fair value of assets or liabilities (financial or nonfinancial) or foreign exchange rates after the balance sheet date but before financial statements are issued or are available to be issued

g. Entering into significant commitments or contingent liabilities, for example, by issuing significant guarantees after the balance sheet date but before financial statements are issued or are available to be issued

Disclosures

13. In addition to the disclosure of subsequent events as required throughout this statement, for annual and interim reporting periods, reporting entities shall disclose the dates through which subsequent events have been evaluated for statutory reporting and for audited financial statements along with the dates the statutory reporting statements and the audited financial statements were issued, or available to

be issued. In the audited financial statements, reporting entities shall specifically identify subsequent events identified after the date subsequent events were reviewed for statutory reporting.

14. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

15. The above guidance was originally adopted to be consistent with the AICPA *Statement on Auditing Standards No. 1*, Section 560, *Subsequent Events*. In 2009, *FASB Statement No. 165, Subsequent Events* (FAS 165), was adopted for statutory accounting. The adoption of this guidance should not result in significant changes in the subsequent events that an entity reports, through either recognition or disclosure, in its financial statements. FAS 165 introduced the concept of available to be issued and requires additional disclosures on the dates for which an entity evaluated subsequent events as well as the date the financial statements were issued, or available to be issued. Guidance within ASU 2010-09 (modifications to Subtopic 855-10 in the FASB Codification) has been rejected for statutory accounting.

Effective Date and Transition

16. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*. Changes adopted as a result of FAS 165, are effective for years ending on and after December 31, 2009.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 9—Subsequent Events*

Statement of Statutory Accounting Principles No. 29

Prepaid Expenses

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	Supersedes SSAP No. 87 with guidance incorporated August 2011; Nullifies and incorporates INT 08-04
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for the accounting for prepaid expenses. This statement does not address accounting for deferred policy acquisition costs and other underwriting expenses, income taxes, and guaranty fund assessments. This statement does not address nonrefundable advance payments for goods or services received for use in future research and development activities, which are addressed in *SSAP No. 17—Preoperating and Research and Development Costs.*

SUMMARY CONCLUSION

2. A prepaid expense is an amount which has been paid in advance of receiving future economic benefits anticipated by the payment. Prepaid expenses generally meet the definition of assets in *SSAP No. 4—Assets and Nonadmitted Assets*. Such expenditures also meet the criteria defining nonadmitted assets as specified in SSAP No. 4, (i.e., the assets are not readily available to satisfy policyholder obligations). Prepaid expenses shall be reported as nonadmitted assets and charged against unassigned funds (surplus). They shall be amortized against net income as the estimated economic benefit expires.

3. In accordance with the reporting entity's written capitalization policy, prepaid expenses less than a predefined threshold shall be expensed when purchased. The reporting entity shall maintain a

capitalization policy containing the predefined thresholds for each asset class to be made available for the department(s) of insurance.

Disclosures

4. The financial statements shall disclose if the written capitalization policy and the resultant predefined thresholds changed from the prior period and the reason(s) for such change.

Relevant Literature

5. This statement rejects *AICPA Practice Bulletin No. 13, Direct-Response Advertising and Probable Future Benefits, AICPA Statement of Position 93-7, Reporting on Advertising Costs* and *FASB Emerging Issues Task Force No. 88-23, Lump-Sum Payments under Union Contracts*.

Effective Date and Transition

6. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*. Guidance reflected in paragraphs 3 and 4, incorporated from SSAP No. 87, was originally effective for years beginning on and after January 1, 2004.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 29—Prepaid Expenses (excluding deferred policy acquisition costs and other underwriting expenses, income taxes and guaranty fund assessments)*

- *Issue Paper No. 119—Capitalization Policy, An Amendment to SSAP Nos. 4, 19,29, 73, 79 and 82*

Statement of Statutory Accounting Principles No. 53

Property Casualty Contracts—Premiums

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	Nullifies and incorporates INT 99-23, INT 01-23, INT 02-11 and INT 05-06
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	A-225

SCOPE OF STATEMENT

1. This statement establishes general statutory accounting principles for the recording and recognition of premium revenue for property and casualty contracts as defined in *SSAP No. 50—Classifications of Insurance or Managed Care Contracts*.

2. Specific statutory requirements for certain property and casualty premiums are addressed in the following statements: (a) *SSAP No. 57—Title Insurance*, (b) *SSAP No. 58—Mortgage Guaranty Insurance,* (c) *SSAP No. 60—Financial Guaranty Insurance,* (d) *SSAP No. 62R—Property and Casualty Reinsurance,* (e) *SSAP No. 65—Property and Casualty Contracts,* and (f) *SSAP No. 66—Retrospectively Rated Contracts and Contracts*.

SUMMARY CONCLUSION

3. Except as provided for in paragraph 4, written premium is defined as the contractually determined amount charged by the reporting entity to the policyholder for the effective period of the contract based on the expectation of risk, policy benefits, and expenses associated with the coverage provided by the

terms of the insurance contract. Frequently, insurance contracts are subject to audit by the reporting entity and the amount of premium charged is subject to adjustment based on the actual exposure. Premium adjustments are discussed in paragraphs 10-13 of this statement.

4. For workers' compensation contracts, which have a premium that may periodically vary based upon changes in the activities of the insured, written premiums may be recorded on an installment basis to match the billing to the policyholder. Under this type of arrangement, the premium is determined and billed according to the frequency stated in the contract, and written premium is recorded on the basis of that frequency.

5. Premiums for prepaid legal expense plans shall be recognized as income on the gross basis (amount charged to the policyholder or subscriber exclusive of copayments or other charges) when due from policyholders or subscribers, but no earlier than the effective date of coverage, under the terms of the contract. Due and uncollected premiums shall follow the guidance in *SSAP No. 6—Uncollected Premium Balances, Bills Receivable for Premiums, and Amounts Due From Agents and Brokers*, to determine the admissibility of premiums and related receivables.

6. Written premiums for all other contracts shall be recorded as of the effective date of the contract. Upon recording written premium, a liability, the unearned premium reserve, shall be established to reflect the amount of premium for the portion of the insurance coverage that has not yet expired. Flat fee service charges on installment premiums[1] (fees charged to policyholders who pay premiums on an installment basis rather than in full at inception of contract) are reported in the Other Income section of the Underwriting and Investment Exhibit as Finance and Service Charges. Flat fee service charges on installment premiums, which do not meet the requirements outlined in footnote 1 (e.g., policy may be cancelled for non-payment of fee or fee is refundable), shall be recorded as written premium on the effective date of the contract and subject to the unearned premium guidelines included in paragraph 8.

7. The exposure to insurance risk for most property and casualty insurance contracts does not vary significantly during the contract period. Therefore, premiums from those types of contracts shall be recognized in the statement of income, as earned premium, using either the daily pro-rata or monthly pro-rata methods as described in paragraph 8. Certain statements provide for different methods of recognizing premium in the statement of operations for specific types of contracts. For contracts not separately identified in specific statements where the reporting entity can demonstrate the period of risk differs significantly from the contract period, premiums shall be recognized as revenue over the period of risk in proportion to the amount of insurance protection provided.

8. One of the following methods shall be used for computation of the unearned premium reserve:

   a. Daily pro rata method—Calculate the unearned premium on each policy—At the end of each period, the calculation is made on each item of premium to ascertain the unexpired portion and to arrive at the aggregate unearned premium reserve;

[1] If the policyholder elects to pay an installment rather than the full amount or the full remaining balance, the policyholder is traditionally charged a flat fee service charge on the subsequent billing cycle(s). The amount charged is primarily intended to compensate the insurer for the additional administrative costs associated with processing more frequent billings and has no relationship to the amount of insurance coverage provided, the period of coverage, or the lost investment income associated with receiving the premium over a period of time rather than in a lump sum. As described, there is no underwriting risk associated with this service charge. If a policyholder does not pay the service charge, the policy is not cancelled (unlike non-payment of premium), but instead the policy is converted back to an annual pay plan. If a policyholder cancels coverage, the premium is returned but the service charge is not, as the service charge is not a part of premium. Note that this footnote on flat fee service charges on installment premium is intentionally narrow and specific, and this guidance should not be applied to other fees or service charges. ~~Clarification of~~Reporting of installment fees in finance and service charges as other income should not be construed as having any bearing on whether such charges are subject to premium taxation, which remains an issue of state law and regulation.

b. Monthly pro rata method—This method assumes that, on average, the same amount of business is written each day of any month so that the mean will be the middle of the month. For example, one-year premiums written during the first three months of the year have, at the end of the year, the following unearned fractions: January-1/24; February-3/24; March-5/24.

9. Additional premiums charged to policyholders for endorsements and changes in coverage under the contract shall be recorded on the effective date of the endorsement and accounted for in a manner consistent with the methods discussed in paragraphs 4-8. This is done so that, at any point in time, a liability is accrued for unearned premium related to the unexpired portion of the policy endorsement.

Earned but Unbilled Premium

10. Adjustments to the premium charged for changes in the level of exposure to insurance risk (e.g., audit premiums on workers' compensation policies) are generally determined based upon audits conducted after the policy has expired. Reporting entities shall estimate audit premiums, the amount generally referred to as earned but unbilled (EBUB) premium, and shall record the amounts as an adjustment to premium, either through written premium or as an adjustment to earned premium. The estimate for EBUB may be determined using actuarially or statistically supported aggregate calculations using historical company unearned premium data, or per policy calculations.

11. EBUB shall be adjusted upon completion of the audit and the adjustment shall be recognized as revenue immediately. Upon completion of an audit that results in a return of premiums to the policyholder, earned premiums shall be reduced.

12. Reporting entities shall establish all of the requisite liabilities associated with the asset such as commissions and premium taxes. These liabilities shall be determined based on when premium is earned, not collected[2].

13. Ten percent of EBUB in excess of collateral specifically held and identifiable on a per policy basis shall be reported as a nonadmitted asset. To the extent that amounts in excess of the 10% are not anticipated to be collected, they shall be written off against operations in the period the determination is made.

Earned but Uncollected Premium

14. Reporting entities may utilize a voluntary procedure whereby policies are not cancelled for non-payment of the premium until after an extended cancellation period (example 30 days), as opposed to the shorter statutory cancellation period. There are other instances when a reporting entity provides coverage for periods when the payment has not been received. Prior to the cancellation of the policy the reporting entity acknowledges it is "at risk" and subject to "actual exposure" for a valid claim despite the fact that the reporting entity may not have received payment of the premium for this exposure. Reporting entities shall record earned but uncollected premium as direct and assumed written premium since the reporting entity is "at risk" and subject to "actual exposure" for the extended period of time when the policy is still in force and effective, whether or not the reporting entity collects a premium for this time period. Earned but uncollected premium would be charged to expenses **"**net gain or (loss) from agents or premium balances charged off" when it is determined to be uncollectible.

[2] If an entity feels comfortable enough in their ability to collect the premium that an asset is recorded, they should also book the associated liabilities. Once an estimate of the premium has been made and the entity feels certain that it will be collected, it should also book the liabilities that will be due when they receive the cash. If the premiums were unearned and the policyholder had the ability to cancel, the definition of a liability has not been met.

Advance Premiums

15. Advance premiums result when the policies have been processed, and the premium has been paid prior to the effective date. These advance premiums are reported as a liability in the statutory financial statement and not considered income until due. Such amounts are not included in written premium or the unearned premium reserve.

Premium Deposits on Perpetual Fire Deposits

16. Premium deposits on perpetual fire insurance risks should be charged as a liability to the extent of at least 90% of the gross amount of such deposit.

Premium Deficiency Reserve

17. When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, and any future installment premiums on existing policies, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency, with a corresponding charge to operations. Commission and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have previously been expensed. For purposes of determining if a premium deficiency exists, insurance contracts shall be grouped in a manner consistent with how policies are marketed, serviced and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings.

18. If a premium deficiency reserve is established in accordance with paragraph 17, disclose the amount of that reserve. If a reporting entity utilizes anticipated investment income as a factor in the premium deficiency calculation, the reporting entity's disclosures shall include a statement that anticipated investment income was utilized; however, the dollar amount need not be included. Reporting entities need to disclose by statement only that anticipated investment income was utilized in the calculation of premium deficiency reserves whether a reserve is recorded or not (i.e., the use of anticipated investment income mitigated the need for recording a premium deficiency reserve).

Disclosures

19. Disclose the aggregate amount of direct premiums written through managing general agents or third party administrators. For purposes of this disclosure, a managing general agent means the same as in Appendix A-225. If this amount is equal to or greater than 5% of surplus, provide the following information for each managing general agent and third party administrator:

a. Name and address of managing general agent or third party administrator;

b. Federal Employer Identification Number;

c. Whether such person holds an exclusive contract;

d. Types of business written;

e. Type of authority granted (i.e., underwriting, claims payment, etc.); and

f. Total premium written.

20. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

21. This statement rejects *FASB Statement No. 60, Accounting and Reporting by Insurance Enterprises*.

Effective Date and Transition

22. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*. The guidance in paragraph 5 was originally contained within *INT 01-23: Prepaid Legal Insurance Premium Recognition* and was effective June 11, 2001. The guidance reflected in paragraph 12, incorporated from *INT 02-11: Recognition of Amounts Related to Earned but Unbilled Premium*, was effective September 10, 2002. The guidance reflected in paragraph 14, incorporated from *INT 05-06: Earned but Uncollected Premium*, was effective December 3, 2005. The guidance in paragraph 18 incorporated from *INT 99-23: Disclosure of Premium Deficiency Reserves* was effective December 6, 1999.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 53—Property Casualty Contracts—Premiums*

Statement of Statutory Accounting Principles No. 55

Unpaid Claims, Losses and Loss Adjustment Expenses

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	Supersedes SSAP No. 85 with guidance incorporated August 2011; Nullifies and incorporates INT 00-31, INT 01-28, INT 02-21, INT 03-17 and INT 06-14
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for recording liabilities for unpaid claims and claim adjustment expenses for life insurance contracts and accident and health contracts and unpaid losses and loss adjustment expenses for property and casualty insurance contracts. This guidance applies equally to those entities with direct and reinsurance-assumed obligations. This statement applies to all insurance contracts as defined in *SSAP No. 50—Classifications of Insurance or Managed Care Contracts*.

2. This statement does not address policy reserves for life and accident and health policies. These reserves are addressed in *SSAP No. 51R—Life Contracts*, *SSAP No. 52—Deposit-Type Contracts*, *SSAP No. 54R—Individual and Group Accident and Health Contracts*, and *SSAP No. 59—Credit Life and Accident and Health Insurance Contracts.*

3. This statement does not address liabilities for punitive damages. These liabilities shall be recorded in accordance with *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets*.

SUMMARY CONCLUSION

4. Claims, losses, and loss/claim adjustment expenses shall be recognized as expenses when a covered or insured event occurs. In most instances, the covered or insured event is the occurrence of an incident which gives rise to a claim or the incurring of costs. For claims-made type policies, the covered or insured event is the reporting to the entity of the incident that gives rise to a claim. Until ~~C~~claim payments and related expense payments are made subsequent to the occurrence of a covered or insured event, and in order to recognize the expense of a covered or insured event that has occurred, it is necessary to establish a liability. Liabilities shall be established for any unpaid claims and unpaid losses (loss reserves), unpaid loss/claim adjustment expenses (loss/claim adjustment expense reserves) and incurred costs, with a corresponding charge to income. Claims related extra contractual obligations losses and bad-faith losses shall be included in losses. See individual business types for the accounting treatment for adjustment expenses related to extra contractual obligations and bad-faith lawsuits.

5. The liability for unpaid LAE shall be established regardless of any payments made to third-party administrators, management companies or other entities except for capitated payments under managed care contracts for which~~. The liability for claims adjustment expenses on non-capitated payments under managed care contracts shall be established in an amount necessary to adjust all unpaid claims irrespective of payments made to third party administrators, etc. The liability for claims adjustment expenses on capitated payments under managed care contracts shall be established in an amount necessary to adjust all unpaid claims irrespective of payments to third parties with the exception that~~ the liability is established net of capitated payments to providers.

Property/Casualty

6. The following are types of future costs relating to property and casualty contracts, as defined in SSAP No. 50, which shall be considered in determining the liabilities for unpaid losses and loss adjustment expenses:

a. Reported Losses: Expected payments for losses relating to insured events that have occurred and have been reported to, but not paid by, the reporting entity as of the statement date;

b. Incurred But Not Reported Losses (IBNR): Expected payments for losses relating to insured events that have occurred but have not been reported to the reporting entity as of the statement date. As a practical matter, IBNR may include losses that have been reported to the reporting entity but have not yet been entered to the claims system or bulk provisions. Bulk provisions are reserves included with other IBNR reserves to reflect deficiencies in known case reserves;

c. Loss Adjustment Expenses: Expected payments for costs to be incurred in connection with the adjustment and recording of losses defined in paragraphs 6.a. and 6.b. Examples of expenses incurred in these activities are estimating the amounts of losses, disbursing loss payments, maintaining records, general clerical, secretarial, office maintenance, occupancy costs, utilities, computer maintenance, supervisory and executive duties, supplies, and postage. Loss adjustment expenses can be classified into two broad categories: Defense and Cost Containment (DCC) and Adjusting and Other (AO):

i. DCC include defense[1], litigation, and medical cost containment expenses, whether internal or external. DCC include, but are not limited to, the following items:

[1] Legal defense costs incurred under the definition of covered damages or losses as the only insured peril would be accounted for as losses, while legal defense costs incurred under a duty to defend would be accounted for as Defense and Cost Containment

(a) Surveillance expenses;

(b) Fixed amounts for medical cost containment expenses;

(c) Litigation management expenses;

(d) Loss adjustment expenses for participation in voluntary and involuntary market pools if reported by accident year;

(e) Fees or salaries for appraisers, private investigators, hearing representatives, reinspectors and fraud investigators, if working in defense of a claim, and fees or salaries for rehabilitation nurses, if such cost is not included in losses;

(f) Attorney fees incurred owing to a duty to defend, even when other coverage does not exist; and

(g) The cost of engaging experts;

ii. AO are those expenses other than DCC as defined in (i) above assigned to the expense group "Loss Adjustment Expense". AO include, but are not limited to, the following items:

(a) Fees and expenses of adjusters and settling agents;

(b) Loss adjustment expenses for participation in voluntary and involuntary market pools if reported by calendar year;

(c) Attorney fees incurred in the determination of coverage, including litigation between the reporting entity and the policyholder;

(d) Fees and salaries for appraisers, private investigators, hearing representatives, reinspectors and fraud investigators, if working in the capacity of an adjuster; and

(e) Adjustment expenses arising from claims related lawsuits such as extra contractual obligations and bad faith lawsuits.

d. The contractual terms for arrangements (i.e., variable, fixed or bundled amounts) to third-party administrators, management companies, or other entities for unpaid claims, losses and losses/claims adjustment expenses, shall be evaluated to determine if the arrangement meets the criteria to be reported as a prepaid asset and nonadmitted in accordance with *SSAP No. 29—Prepaid Expenses*. These payments shall not be offset against any amounts required to be reported in accordance with paragraph 4 or paragraph 5 within this guidance. Only when loss/claim and related adjusting expense payments, which are made by the third-party administrators, management companies or other entities, to the policyholder or claimant, shall the insurer's liability (loss/claim or loss/claim adjustment expense reserves) be reduced.

e. Prepayments to third-party administrators, management companies or other entities that do not relate to services or adjusting for the underlying direct policy benefits are reported

(DCC). For policies where legal costs are the only insured peril, the insurer would record the legal costs that reimburse the policyholder as loss and, to the extent the insurer participated in the defense, would record its legal costs as DCC. This is not intended to change the classifications of legal expenses for existing long tailed lines of liability coverage, such as medical malpractice and workers' compensation insurance.

as aggregate write-ins for miscellaneous underwriting benefits in the Underwriting and Investment Exhibit Part 3.

Life, Accident and Health

7. The following future costs relating to life and accident and health indemnity contracts, as defined in SSAP No. 50, shall be considered in determining the liability for unpaid claims and claim adjustment expenses:

a. Accident and Health Claim Reserves: Reserves for claims that involve a continuing loss. This reserve is a measure of the future benefits or amounts not yet due as of the statement date which are expected to arise under claims which have been incurred as of the statement date. This shall include the amount of claim payments that are not yet due such as those amounts commonly referred to as disabled life reserves for accident and health claims. The methodology used to establish claim reserves is discussed in SSAP No. 54R.

b. Claim Liabilities for Life/Accident and Health Contracts:

i. Due and Unpaid Claims: Claims for which payments are due as of the statement date;

ii. Resisted Claims in Course of Settlement: Liability for claims that are in dispute and are unresolved on the statement date. The liability either may be the full amount of the submitted claim or a percentage of the claim based on the reporting entity's past experience with similar resisted claims;

iii. Other Claims in the Course of Settlement: Liability for claims that have been reported but the reporting entity has not received all of the required information or processing has not otherwise been completed as of the statement date;

iv. Incurred But Not Reported Claims: Liability for which a covered event has occurred (such as death, accident, or illness) but has not been reported to the reporting entity as of the statement date.

c. Claim Adjustment Expenses for Accident and Health Reporting Entities are those costs expected to be incurred in connection with the adjustment and recording of accident and health claims defined in paragraphs 7.a. and 7.b. Certain claim adjustment expenses reduce the number or cost of health services thereby resulting in lower premiums or lower premium increases. These claim adjustment expenses shall be classified as cost containment expenses.

d. Claim Adjustment Expenses for Life Reporting Entities: Costs expected to be incurred (including legal and investigation) in connection with the adjustment and recording of life claims defined in paragraph 7.b. This would include adjustment expenses arising from claims-related lawsuits such as extra contractual obligations and bad-faith lawsuits.

e. In cases where insurers advance funds to third-party administrators, management companies or other entities prior to the occurrence of the claim who then, on behalf of the insurer, adjudicate the claim and make payments to insureds or other claimants, the guidance in paragraph 9 applies.

Managed Care

8. The following costs relating to managed care contracts as defined in SSAP No. 50 shall be considered in determining the claims unpaid and claims adjustment expenses:

a. Claims unpaid for Managed Care Reporting Entities:

i. Unpaid amounts for costs incurred in providing care to a subscriber, member or policyholder including inpatient claims, physician claims, referral claims, other medical claims, resisted claims in the course of settlement and other claims in the course of settlement;

ii. Incurred But Not Reported Claims: Liability for which a covered event has occurred (such as an accident, illness or other service) but has not been reported to the reporting entity as of the statement date;

iii. Additional unpaid medical costs resulting from failed contractors under capitation contracts and provision for losses incurred by contractors deemed to be related parties for which it is probable that the reporting entity will be required to provide funding;

b. Claim Adjustment Expenses for Managed Care Reporting Entities are those costs expected to be incurred in connection with the adjustment and recording of managed care claims defined in paragraph 8.a. Certain claim adjustment expenses reduce the number or cost of health services thereby resulting in lower premiums or lower premium increases. These claim adjustment expenses shall be classified as cost containment expenses.

c. Liabilities for percentage withholds ("withholds") from payments made to contracted providers;

d. Liabilities for accrued medical incentives under contractual arrangements with providers and other risk-sharing arrangements whereby the health entity agrees to share savings with contracted providers.

e. In cases where insurers advance funds to third-party administrators, management companies or other entities prior to the occurrence of the claim who then, on behalf of the insurer, adjudicate the claim and make payments to insureds or other claimants, the guidance in paragraph 9 applies.

Managed Care and Accident and Health

9. In some instances, insurers advance funds to third-party administrators, management companies or other entities prior to the occurrence of the claim who then, on behalf of the insurer, adjudicate the claim and make payments to insureds or other claimants. In such cases the following guidance applies:

a. For capitated payments under managed care contracts, the liability for claims and claim adjusting expenses shall be established in an amount necessary to adjudicate and pay all unpaid claims irrespective of payments to third-party administrators, management companies or other entities, and is reported net of capitated payments to providers.

b. For non-capitated advance payments, the liability for unpaid losses/claims and related adjustment expenses shall be established regardless of any payments made to third-party administrators, management companies or other entities, and such payments shall be reported by the insurer as prepayments. All prepayments (i.e., variable, fixed or bundled amounts) to third-party administrators, management companies, or other entities for

unpaid claims, losses and losses/claims adjustment expenses, shall be initially reported as a prepaid asset and nonadmitted in accordance with SSAP No. 29. These payments shall not be offset against any amounts required to be reported in accordance with paragraph 4 or paragraph 5 within this guidance. Only when loss/claim and related adjusting expense payments which are made by the third-party administrators, management companies or other entities, to the policyholder or claimant, shall the insurer's liability (loss/claim or loss/claim adjustment expense reserves) be reduced.

c. Prepayments to third-party administrators, management companies or other entities that do not relate to services or adjusting for the underlying direct policy benefits are reported as (1) aggregate write-ins for expenses - Life/Health (Exhibit 2 – General Expenses) or (2) aggregate write-ins for expenses (General Administrative Expenses) - Health (Underwriting and Investment Exhibit Part 3).

Note that the guidance in paragraph 9 does not alter existing guidance regarding the admissibility of loans and advances to providers which apply to health insurance and managed care contracts which is addressed in *SSAP No. 84—Health Care and Government Insured Plan Receivables.*

~~9.~~10. Claim adjustment expenses for accident and health contracts and managed care contracts (identified in paragraphs 7.c. and 8.b.), including legal expenses, can be subdivided into cost containment expenses and other claim adjustment expenses:

a. Cost containment expenses: Expenses that actually serve to reduce the number of health services provided or the cost of such services. The following are examples of items that shall be considered "cost containment expenses" only if they result in reduced levels of costs or services:

i. Case management activities;

ii. Utilization review;

iii. Detection and prevention of payment for fraudulent requests for reimbursement;

iv. Network access fees to Preferred Provider Organizations and other network-based health plans (including prescription drug networks), and allocated internal salaries and related costs associated with network development and/or provider contracting;

v. Consumer education solely relating to health improvement and relying on the direct involvement of health personnel (this would include smoking cessation and disease management programs, and other programs that involve hands on medical education); and

vi. Expenses for internal and external appeals processes.

b. Other claim adjustment expenses: Claim adjustment expenses as defined in paragraph 7.c. or 8.b. that are not cost containment expenses. Examples of other claim adjustment expenses are:

i. Estimating the amounts of losses and disbursing loss payments;

ii. Maintaining records, general clerical, and secretarial;

iii. Office maintenance, occupancy costs, utilities, and computer maintenance;

iv. Supervisory and executive duties; and

v. Supplies and postage.

vi. This would include adjustment expenses arising from claims-related lawsuits such as extra contractual obligations and bad-faith lawsuits.

vii. Interest paid in accordance with prompt payment laws or regulations to claimants. (Interest paid to regulatory authorities is reported as regulatory fines and fees.)

General

~~10.~~11. The liability for claim reserves and claim liabilities, unpaid losses, and loss/claim adjustment expenses shall be based upon the estimated ultimate cost of settling the claims (including the effects of inflation and other societal and economic factors), using past experience adjusted for current trends, and any other factors that would modify past experience. These liabilities shall not be discounted unless authorized for specific types of claims by specific SSAPs, including SSAP No. 54R and *SSAP No. 65—Property and Casualty Contracts*.

~~11.~~12. Various analytical techniques can be used to estimate the liability for IBNR claims, future development on reported losses/claims, and loss/claim adjustment expenses. These techniques generally consist of statistical analysis of historical experience and are commonly referred to as loss reserve projections. The estimation process is generally performed by line of business, grouping contracts with like characteristics and policy provisions. The decision to use a particular projection method and the results obtained from that method shall be evaluated by considering the inherent assumptions underlying the method and the appropriateness of those assumptions to the circumstances. No single projection method is inherently better than any other in all circumstances. The results of more than one method should be considered.

~~12.~~13. For each line of business and for all lines of business in the aggregate, management shall record its best estimate of its liabilities for unpaid claims, unpaid losses, and loss/claim adjustment expenses. Because the ultimate settlement of claims (including IBNR for death claims and accident and health claims) is subject to future events, no single claim or loss and loss/claim adjustment expense reserve can be considered accurate with certainty. Management's analysis of the reasonableness of claim or loss and loss/claim adjustment expense reserve estimates shall include an analysis of the amount of variability in the estimate. If, for a particular line of business, management develops its estimate considering a range of claim or loss and loss/claim adjustment expense reserve estimates bounded by a high and a low estimate, management's best estimate of the liability within that range shall be recorded. The high and low ends of the range shall not correspond to an absolute best-and-worst case scenario of ultimate settlements because such estimates may be the result of unlikely assumptions. Management's range shall be realistic and, therefore, shall not include the set of all possible outcomes but only those outcomes that are considered reasonable. Management shall also follow the concept of conservatism included in the Preamble when determining estimates for claims reserves. However, there is not a specific requirement to include a provision for adverse deviation in claims.

~~13.~~14. In the rare instances when, for a particular line of business, after considering the relative probability of the points within management's estimated range, it is determined that no point within management's estimate of the range is a better estimate than any other point, the midpoint within management's estimate of the range shall be accrued. It is anticipated that using the midpoint in a range will be applicable only when there is a continuous range of possible values, and no amount within that range is any more probable than any other. For purposes of this statement, it is assumed that management can quantify the high end of the range. If management determines that the high end of the range cannot be quantified, then a range does not exist, and management's best estimate shall be accrued. This guidance is not applicable when there are several point estimates which have been determined as equally possible

values, but those point estimates do not constitute a range. If there are several point estimates with equal probabilities, management should determine its best estimate of the liability.

~~14.~~15. If a reporting entity chooses to anticipate salvage and subrogation recoverables (including amounts recoverable from second injury funds, other governmental agencies, or quasi-governmental agencies, where applicable), the recoverables shall be estimated in a manner consistent with paragraphs ~~10-12~~11-13 of this statement. Estimated salvage and subrogation recoveries (net of associated expenses) shall be deducted from the liability for unpaid claims or losses. If a reporting entity chooses to anticipate coordination of benefits (COB) recoverables of Individual and Group Accident and Health Contracts, the recoverables shall be estimated in a manner consistent with paragraphs ~~10-12~~11-13 of this statement and shall be deducted from the liability for unpaid claims or losses. A separate receivable shall not be established for these recoverables. In addition, all of these recoverables are also subject to the impairment guidelines established in *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets* and an entity shall not reduce its reserves for any recoverables deemed to be impaired. Salvage and subrogation recoveries received (net of associated expenses) are reported as a reduction to paid losses/claims. Coordination of benefits (COB) recoveries received of Individual and Group Accident and Health Contracts (net of associated expenses) are reported as a reduction to paid claims.

~~15.~~16. Changes in estimates of the liabilities for unpaid claims or losses and loss/claim adjustment expenses resulting from the continuous review process, including the consideration of differences between estimated and actual payments, shall be considered a change in estimate and shall be recorded in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*. SSAP No. 3 requires changes in estimates to be included in the statement of operations in the period the change becomes known. This guidance also applies to the period subsequent to the March 1 filing deadline for annual financial statements through the filing deadline of June 1 for audited annual financial statements.

Disclosures

~~16.~~17. The financial statements shall include the following disclosures for each year full financial statements are presented. The disclosure requirement in paragraph ~~16~~17.d. is also applicable to the interim financial statements if there is a material change from the amounts reported in the annual filing. Life and annuity contracts are not subject to this disclosure requirement.

a. The balance in the liabilities for unpaid claims and unpaid losses and loss/claim adjustment expense reserves at the beginning and end of each year presented;

b. Incurred claims, losses, and loss/claim adjustment expenses with separate disclosures of the provision for insured or covered events of the current year and increases or decreases in the provision for insured or covered events of prior years;

c. Payments of claims, losses, and loss/claim adjustment expenses with separate disclosures of payments of losses and loss/claim adjustment expenses attributable to insured or covered events of the current year and insured or covered events of prior years;

d. The reasons for the change in the provision for incurred claims, losses, and loss/claim adjustment expenses attributable to insured or covered events of prior years. The disclosure should indicate whether additional premiums or return premiums have been accrued as a result of the prior-year effects. (For Title reporting entities, “provision” refers to the known claims reserve included in Line 1 of the Liabilities page, and “prior years” refers to prior report years);

e. Information about significant changes in methodologies and assumptions used in calculating the liability for unpaid claims and claim adjustment expenses, including reasons for the change and the effects on the financial statements for the most recent reporting period presented;

f. A summary of management's policies and methodologies for estimating the liabilities for losses and loss/claim adjustment expenses, including discussion of claims for toxic waste cleanup, asbestos-related illnesses, or other environmental remediation exposures;

g. Disclosure of the amount paid and reserved for losses and loss/claim adjustment expenses for asbestos and/or environmental claims, on a direct, assumed and net of reinsurance basis (the reserves required to be disclosed in this section shall exclude amounts relating to policies specifically written to cover asbestos and environmental exposures). Each company should report only its share of a group amount (after applying its respective pooling percentage) if the company is a member of an intercompany pooling agreement; and

h. Estimates of anticipated salvage and subrogation (including amounts recoverable from second injury funds, other governmental agencies, or quasi-governmental agencies, where applicable), deducted from the liability for unpaid claims or losses.

~~17.~~18. All reporting entity types are required to disclose the dollar amount of any claims/losses related to extra contractual obligation lawsuits or bad faith lawsuits paid during the reporting period on a direct basis. The number of such claims paid shall be disclosed in a note.

~~18.~~19. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

~~19.~~20. Although FASB *Statement No. 60, Accounting and Reporting by Insurance Enterprises* (FAS 60), is rejected in SSAP No. 50, this statement is consistent with the guidance provided for the recognition of claim costs in FAS 60 with the exception of the statutory requirement to accrue the midpoint of a range of loss or loss adjustment expense reserve estimates when no point within management's continuous range of reasonably possible estimates is determined to be a better estimate than any other point.

~~20.~~21. This statement also rejects *ASU 2018-12, Targeted Improvements to the Accounting for Long-Duration Contracts*, *AICPA Statement of Position 92-4, Auditing Insurance Entities' Loss Reserves* and *ASU 2015-09, Disclosures about Short-Duration Contracts.* Although the disclosures in ASU 2015-09 are similar to existing statutory accounting disclosures on claims development, the U.S. GAAP disclosures would reflect consolidated information, with potential for different aggregations than what is used for a legal entity basis under statutory accounting. As such, ASU 2015-09 is rejected for statutory accounting, and reporting entities shall follow the established statutory accounting disclosures.

~~21.~~22. Guidance in paragraphs 7.c., 8.b. and ~~9~~10 was incorporated from SSAP No. 85. SSAP No. 85 was issued in 2002 to amend SSAP No. 55 and provide clarification regarding what costs should be classified as claim adjustment expenses on accident and health contracts. In August 2011, SSAP No. 85 was nullified and the guidance was incorporated into this SSAP. *Issue Paper No. 116—Claim Adjustment Expenses, Amendments to SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses* provides historical reference on the original guidance included in SSAP No. 55 as well as the revisions originally reflected in SSAP No. 85.

Effective Date and Transition

~~22.~~23. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with SSAP No. 3. Guidance reflected in paragraphs 7.c., 8.b. and ~~9~~10, incorporated from SSAP No. 85, is effective for years ending on and after December 31, 2003. The guidance incorporated into paragraphs 1, 3, 6.c.ii., 7.d. and ~~9~~10.b.vi. was originally included in *INT 03-17: Classification of Liabilities from Extra Contractual Obligation Lawsuits* and was initially effective March 10, 2004. The guidance in paragraph 5

was previously included in *INT 02-21: Accounting for Prepaid Loss Adjustment Expenses and Claim Adjustment Expenses* effective for reporting periods ending on or after December 31, 2002, for all contracts except for capitated managed care contracts and December 31, 2006, for capitated managed care contracts. The guidance in paragraph ~~12~~13 related to conservatism and adverse deviation was originally contained in *INT 01-28: Margin for Adverse Deviation in Claim Reserve* and was effective October 16, 2001. The guidance in paragraph ~~14~~15 related to coordination of benefits was originally contained within *INT 00-31: Application of SSAP No. 55 Paragraph 12 to Health Entities* and was effective December 4, 2000. The guidance reflected in footnote 1, incorporated from *INT 06-14: Reporting of Litigation Costs Incurred for Lines of Business in which Legal Expenses Are the Only Insured Peril*, was effective June 2, 2007. The guidance in paragraph ~~9~~10.b.vii. regarding interest on managed care and accident and health claims is effective January 1, 2020, with early adoption permitted, and shall be applied prospectively.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses*
- *Issue Paper No. 116—Claim Adjustment Expenses, Amendments to SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses*

Statement of Statutory Accounting Principles No. 57

Title Insurance

STATUS

Type of Issue	Property and Casualty
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	No other pronouncements
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	A-628

SCOPE OF STATEMENT

1. Title insurance insures that the policyholder has title to the property on the subject real estate as of the date of policy issuance, subject to exceptions and exclusions in the policy. When issued, a title policy has a one-time premium and reserves are established by the title insurance company. Title insurance differs from other lines of property and casualty insurance because its basic goal is risk elimination.

2. This statement establishes statutory accounting principles for title insurance and addresses areas where title insurance accounting differs from other lines of insurance. To the extent a topic is not covered by this statement, title insurance accounting shall comply with statutory accounting guidance for other lines of property and casualty insurance.

SUMMARY CONCLUSION

General

3. Title insurers perform many services in connection with the transfer of real estate; however, their principal function involves insuring, guaranteeing, or indemnifying owners of real property or the holders of liens or encumbrances thereon against loss or damage due to defective titles, liens, or encumbrances or, in most states, the unmarketability of the title.

4. In addition to insuring against defective records or examination of those records, an insurer insures against "non-record defects" such as:

a. Forgeries;

b. Fraud;

c. Confusion of name in change of title;

d. Incompetence (minors or persons of unsound mind);

e. Mistakes in public records;

f. Undisclosed or missing heirs;

g. Instruments executed under a fabricated or expired power of attorney;

h. Deeds delivered after death of grantor or grantee or without the consent of the grantor;

i. Deeds by persons supposedly single but actually married;

j. Wills not probated;

k. Liens against property (e.g., mechanics liens and tax liens);

l. Falsified records.

5. Before a title insurance policy is issued, the title insurer, or its agent, must search and examine public records concerning the ownership, liens, and encumbrances on the subject real estate together with information relating to persons having an interest in the real property as well as maps and other records to determine that title to the property is insurable, or defects can be overcome.

Premium Revenue and Loss Reserve Recognition

6. A variety of services are generally provided (either by the title insurance underwriter, its agent, or others) in connection with the transfer of title to real estate. Title insurance premiums frequently are determined in the rate-making process based on the bundle of services provided, including some or all of title search and examination and closing or escrow fees. By statute or custom, certain states exclude a combination of title search, examination and closing or escrow fees from the rate-making process for title insurance premiums. Premiums shall be recorded at the date of policy issuance, on a gross premium basis, consistent with the rate-making method used. The premium related to a title insurance policy is due upon the effective date of the insurance and is not refundable. The term of a title insurance policy is indefinite because the policyholder is insured for as long as he or his heirs or devisees have an interest in the property.

7. Amounts paid to or retained by agents shall be reported as an expense.

8. A liability shall be established for all known unpaid claims and loss adjustment expenses (known claims reserve) with a corresponding charge to income. The known claim reserve is further detailed in the Title Annual Statement Operations and Investment Exhibit on Unpaid Losses and Loss Adjustment Expenses. The known claims reserve should be the estimated costs to settle reported claims based upon the most current information available to the company as of the balance sheet date. This amount cannot be less than the aggregate of the individual case reserves.

9. Premium revenue shall be deferred to the extent necessary to maintain a Statutory or Unearned Premium Reserve (SPR or UPR) determined in accordance with the reserve section of Appendix A-628.

10. If the actuarially determined liability (the sum of the known claims reserve, IBNR claims reserve, and loss adjustment expense reserve) exceeds the sum of the known claims reserve and SPR or UPR, a supplemental reserve shall be established that is equal to the difference between these sums. This calculation is explicitly detailed in the Title Annual Statement Operations and Investment Exhibit for Unpaid Losses and Loss Adjustment Expenses.

11. The actuarially determined liability for the sum of known claims reserve required in paragraph 8 and the IBNR claims and loss adjustment expenses required in paragraph 10 of this statement shall be determined consistently with the guidance detailed in *SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses* and consistent with paragraph 13 of this statement.

12. Assets acquired in settlement of claims (e.g., mortgages and real estate) shall be accounted for consistent with the guidance related to the asset acquired. For example, an impaired loan shall be accounted for in accordance with *SSAP No. 37—Mortgage Loans*, and real estate acquired in foreclosure shall be accounted for in accordance with *SSAP No. 40R—Real Estate Investments*.

Salvage and Subrogation

13. Salvage and subrogation shall be reflected as follows:

a. Paid losses shall be reported net of realized, but not anticipated, salvage and subrogation. Case basis loss and loss adjustment expense reserves shall not be reduced for anticipated salvage and subrogation, nor shall an asset be established;

b. Paid salvage and subrogation is not realized until a salvage asset or an actual payment pursuant to a subrogation right is in the direct control of the insurer and admissible as an asset for statutory reporting purposes in its own right;

c. Salvage assets and payments pursuant to a subrogation right shall be recorded at current fair value. Current fair value of real estate shall be established through an appraisal conducted by a qualified independent appraiser;

d. If a salvage asset is sold or revalued by the insurer within twelve months of realization for an amount less than the value at which it was originally placed on the books of the insurer, then the loss on disposition shall be treated as a decrease in paid salvage (same effect as an addition to the paid loss) on the corresponding claim. After twelve months, such salvage revaluation will be treated as a loss on disposition or change in value of an asset, and shall not be deducted from the salvage on the corresponding claim;

e. If a salvage asset is sold or revalued by the insurer within twelve months of realization for an amount greater than the value at which it was originally placed on the books of the insurer, then the gain on disposition shall be treated as an increase in paid salvage (same effect as a deduction to the paid loss) on the corresponding claim. After twelve months, such salvage revaluation shall be treated as a gain on disposition or change in value of an asset and shall not be added to the salvage on the corresponding claim;

f. In completing Schedule P and Part 3B, IBNR reserves may make an actuarially determined provision for the expected value of future salvage and subrogation on open claims and IBNR claims.

Reinsurance

14. Although by their nature, title claims relate to errors or omissions that occurred prior to the inception of the reinsurance agreement, title reinsurance contracts shall be accounted for as prospective reinsurance agreements if they meet all of the other criteria established in *SSAP No. 62R—Property and Casualty Reinsurance*.

Allocation of Expenses

15. This statement establishes uniform allocation rules to classify title insurance expenses within prescribed principal groupings. It is necessary to allocate those expenses which may contain characteristics of more than one classification, which this statement will refer to as allocable expenses.

16. Allocable expenses for title insurance companies shall be classified into the following categories on the expense section of the Operations and Investment Exhibit of the annual statement.

a. Title and Escrow Operating Expenses—Title and escrow operating expenses consist of all expenses incurred in relation to engaging in the business of title insurance, including costs associated with the following: (i) issuing or offering to issue a title insurance policy; (ii) soliciting or negotiating the issuance of a title insurance policy; (iii) guaranteeing, warranting or otherwise insuring the correctness of title searches affecting title to real property; (iv) handling of escrows, settlements or closings; (v) executing title insurance policies, effecting contracts of reinsurance, and abstracting, searching or examining titles. Also included are specifically identifiable and allocated expenses relating to the following activities; (i) supervision and training of employees and agents; (ii) operating costs for branch offices or agencies; (iii) underwriting activities; (iv) receiving and paying of premiums and commissions; (v) maintaining general and detailed records; (vi) data processing, advertising, and publicity, clerical, secretarial, office maintenance, supervisory, and executive duties; (vii) postage and delivery; and (viii) all other functions reasonably associated with the business of title insurance. Title and escrow operating expenses do not include losses, loss adjustment expenses (allocated or unallocated), expense of other operations, or investment expenses. The expenses include only amounts incurred directly by the insurer and do not include expenses incurred by any agents (regardless of ownership interest).

b. Title and Escrow Operating Expenses are further broken down in the annual statement by the distribution network that gives rise to the expense incurrence. Accordingly, expenses are specifically identified or allocated (in accordance with reasonable allocation procedures consistently applied) to either Direct Operations, Non-affiliated Agency Operations, or Affiliated Agency Operations.

c. Unallocated Loss Adjustment Expenses (ULAE)—ULAE are those indirect costs incurred by a title insurer, typically internal to the company, which are necessary to process claims or manage the claims settlement function and which are not incurred on a claim-specific basis. ULAE shall include all costs of outside parties involved in claims adjusting services, but shall not include any costs incurred by agents in settlement of title or other claims.

d. Investment Expenses—Investment expenses are those expenses incurred in the investing of funds and the pursuit of investment income, including specifically identifiable and

allocated expenses related to such activities as: (i) initiating or handling orders and recommendations for investments; (ii) research, pricing, appraising, and valuing; (iii) disbursing funds and collecting income; (iv) safekeeping of securities and valuable papers; (v) maintaining general and detailed records; (vi) data processing; (vii) general clerical, secretarial, office maintenance, supervisory, and executive duties; (viii) supplies, postage, and the like; and (ix) all other functions reasonably attributable to the investment of funds. Real estate expenses and real estate taxes are attributable to the Investment Expenses group.

e. Other Operations—The amounts shown for this category represent the allocable expenses incurred by the company in operations other than title and escrow, unallocated loss adjustment, or investment activities.

17. Allocation to the above categories should be based on a method that yields the most accurate results. Specific identification of an expense with an activity that is represented by one of the categories above will generally be the most accurate method. Where specific identification is not feasible, allocation of expenses should be based upon pertinent factors or ratios such as studies of employee activities, salary ratios, or similar analyses.

18. Many companies operate within a group where personnel and facilities are shared. Shared expenses, including expenses under the terms of a management contract, shall be apportioned to the companies incurring the expense as if the expense had been paid solely by the incurring company. The apportionment shall be completed based upon specific identification to the company incurring the expense. Where specific identification is not feasible, apportionment shall be based upon pertinent factors or ratios. Any basis adopted to apportion expenses shall be that which yields the most accurate results and may result from special studies of employee activities, salary ratios, premium ratios or similar analyses. Expenses that relate solely to the operations of an insurance company, such as personnel costs associated with the adjusting and paying of claims, must be borne solely by the insurance company and are not to be apportioned to other companies within a group. Pertinent factors in making this determination shall include which entity has the ultimate obligation to pay the expense. Apportioned expenses are subject to presentation and allocation as provided in paragraphs 16 and 17.

Title Plant

19. Title plants are an integrated and indexed collection of title records consisting of documents, maps, surveys, or entries affecting title to real property or any interest in or encumbrance on the property, which have been filed or recorded in the jurisdiction for which the title plant is established or maintained. They are tangible assets unique to the title insurance industry and are the principal productive asset used to generate title insurance revenue and to mitigate the risk of claims. Title plant shall be reported as an admitted asset, subject to the following valuation restrictions:

a. Costs incurred to construct a title plant, including the costs incurred to obtain, organize, and summarize historical information in an efficient and useful manner, shall be capitalized until the title plant can be used by the company to conduct title searches and issue title insurance policies. The capitalized costs shall be directly related to, and properly identified with, the activities necessary to construct the title plant;

b. Purchased title plants, including a purchased undivided interest in a title plant, shall be recorded at cost at the date of acquisition. For a title plant acquired separately, cost shall be measured by the fair value of the consideration given. For title plant acquired as part of a group of assets, cost shall be measured by the fair value of the consideration given and then cost shall be allocated to the title plant based on its fair value in relation to the total fair value of the group of assets acquired. For title plants acquired as part of a

purchase of assets or in a business combination, cost shall be determined in accordance with *SSAP No. 68—Business Combinations and Goodwill*;

c. A backplant, i.e., a title plant that antedates the period of time covered by the existing title plant may be purchased or constructed. Costs to construct a backplant must be properly identifiable to qualify for capitalization;

d. Costs incurred after a title plant is operational to (i) convert the information from one storage and retrieval system to another, or (ii) modify or modernize the storage and retrieval system shall not be capitalized;

e. Costs incurred to maintain a title plant shall be expensed as incurred;

f. Costs incurred to perform title searches shall be expensed as incurred;

g. An investment in a title plant or plants in an amount equal to the actual cost shall be allowed as an admitted asset for title insurers. The aggregate carrying value of an investment in a title plant or plants shall not exceed the lesser of 20% of admitted assets or forty percent (40%) of surplus to policyholders, both as required to be shown on the statutory balance sheet of the insurer for its most recently filed statement with the domiciliary state commissioner; if the amount of the investment exceeds the above limits, the excess amount shall be recorded as a nonadmitted asset.

20. Certain circumstances may indicate that the value of the title plant may be impaired and, thus, the carrying value of the asset may not be recoverable. If there is an indication of possible impairment of value, the title plant shall be evaluated for impairment and recorded in accordance with *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets*. The following are examples of circumstances that may indicate impairment:

a. Effects of obsolescence, demand, and other economic factors;

b. A significant change in legal requirements or statutory practices in the jurisdiction for which the title plant is established and maintained;

c. A current period operating or cash flow loss combined with a history of such losses or projections that indicate continued losses associated with the revenue produced by the title plant;

d. Failure to maintain the title plant on a current basis and/or lack of appropriate maintenance to keep the title plant up to date; or,

e. Abandonment of a title plant.

21. A properly maintained title plant has an indeterminate life and does not diminish in value with the passage of time, and accordingly, shall not be depreciated.

22. A title insurer may (a) sell its title plant and relinquish all rights to its future use, (b) sell an undivided ownership interest in its title plant, or (c) sell a copy of its title plant or the right to use it. Accounting and presentation for each type of sale noted shall be as follows:

a. When a title insurer sells its title plant and relinquishes all rights to its future use, consideration received shall be presented as a separate component of revenue net of the carrying value of the title plant sold;

b. When a title insurer sells an undivided ownership interest in its title plant, consideration received shall be presented as a separate component of revenue net of the pro rata portion of the carrying value of the title plant;

c. When a title insurer sells a copy of its title plant or the right to use it, consideration received shall be presented as a separate component of revenue and the carrying value of the title plant shall not be reduced.

Disclosures

23. The financial statements shall disclose the following for each period presented:

a. The amount of the known claims reserve, SPR/UPR, and the supplemental reserve;

b. Whether the insurer uses discounting in the calculation of its supplemental reserve, the method and rate used to determine the discount, and the amount of such discount.

24. Any material individual component of the reported expense categories shall be presented either on the face of the Summary of Operations or within the footnotes or related exhibits to the financial statements.

25. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

26. This statement rejects *FASB Statement No. 60, Accounting and Reporting by Insurance Enterprises* (FAS 60); however, it is considered appropriate to use the factors to be considered in the determination of the ultimate cost of settling claims included in FAS 60 when establishing the reserves in accordance with paragraphs 8 and 10 of this statement.

27. This statement adopts *FASB Statement No. 61, Accounting for Title Plant*, with modification for carrying value restrictions. Restrictions on the total carrying value of an investment in a title plant or plants are determined by paragraph 19.g.

Effective Date and Transition

28. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

29. Additions to the SPR or UPR as a result of the provisions of paragraph 17.b.v. of Appendix A-628 shall be phased in pursuant to the provisions of paragraph 17.b.iv. of Appendix A-628.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 57—Title Insurance*

Statement of Statutory Accounting Principles No. 58

Mortgage Guaranty Insurance

STATUS

Type of Issue	Property and Casualty
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	No other pronouncements
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	A-630

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for mortgage guaranty insurance and addresses areas where mortgage guaranty insurance accounting differs from other lines of insurance. To the extent a topic is not covered by this statement and Appendix A-630, mortgage guaranty insurance accounting shall comply with statutory accounting guidance for other lines of property and casualty insurance.

2. Mortgage guaranty insurance protects a lender against loss of all or a portion of the principal amount of a mortgage loan upon default of the mortgagor. Mortgage guaranty insurance differs from other types of property and casualty insurance in that coverage is long-term, and in most cases premiums are level and paid monthly. Most states require issuers of mortgage guaranty contracts to be monoline insurers and impose limitations on the aggregate amount of risk insured based on geographic territories. Additionally, states may require mortgage guaranty insurers to reinsure with only selected reinsurers.

SUMMARY CONCLUSION

General

3. Mortgage guaranty insurance is provided on residential loans (one to four family residences, including condominiums and townhouses). Coverage can range from as little as 5% on pool insurance to as much as 100% of the outstanding loan amount on individual policies. Most policies cover 10% to 30% of the loan amount and are written on first mortgage loans where the loan amount is a high percentage (generally 80% to 95%) of the value of the mortgaged property.

4. Lenders obtain mortgage guaranty insurance to facilitate sales of mortgage loans in secondary markets. It also enables lenders to make a greater number of high ratio (above 80%) loans and allows them to diversify their portfolio of loans.

5. Mortgage guaranty insurers market directly to mortgage lenders. Individual mortgage loans or pools of mortgage loans are insured under individual insurance certificates or policies; each loan, however, is separately underwritten.

6. Mortgage guaranty insurance companies generally offer the following premium payment plans: (a) monthly premiums, (b) a single premium which provides coverage for periods ranging from three to 15 years, (c) nonlevel annual premiums, and (d) level annual premiums. All policies are renewable at the discretion of the lender. The mortgage guaranty insurer does not have an option to cancel or nonrenew the policy, except for fraud or nonpayment of the premium.

7. Premiums are based upon: (a) the percentage of insurance coverage provided, (b) the ratio of the insured mortgage loan to the property value or sales price, and (c) the term and/or premium payment method selected by the lender. Premiums are quoted as a percentage of the total mortgage loan insured and increase as insurance coverage and loan-to-value ratio increases.

8. If a default occurs, the mortgage guaranty insurer generally requires the lender to foreclose and tender merchantable title to the mortgaged property in order to make a claim. The insurer may then, at its option: (a) purchase the property for the lender's cost (generally the entire remaining principal loan balance plus accumulated interest and allowable expenses), (b) pay the percentage of the lender's cost specified by the policy, or (c) arrange for the lender to sell the property and reimburse the lender for any loss up to an agreed amount. Under settlement option (a), the insurer intends to resell the property with the expectation of reducing the amount of loss which would have resulted if option (b) had been elected.

Insured Risk

9. The nature of the insured risk is influenced by certain factors which set mortgage guaranty insurance apart from other types of insurance. These factors are addressed in paragraphs 10-12.

Exposure Period

10. The exposure period is significantly longer for mortgage insurance than for most other property and casualty insurance products. The exposure period can run for the term of the mortgage; however, the average policy life is seven years. The policy is terminated when the mortgage obligation is satisfied or the lender elects to cancel or not renew the policy. In contrast to mortgage guaranty insurance, most property and casualty products need not be renewed by the insurer at the expiration of the policy. Mortgage insurance is renewable at the option of the insured at the renewal rate quoted when the policy commitment was issued.

Losses

11. Losses are affected by the following factors specific to mortgage guaranty insurance:

a. The insured peril—the default of a borrower arises from the credit risk associated with mortgage loans. The frequency of loss is strongly influenced by economic conditions. The likelihood of individual default is further increased if the property has deteriorated since a borrower in financial difficulty will be less able to sell the property at a price sufficient to discharge the mortgage;

b. Mortgage insurance losses can be divided into three categories:

i. Normal losses associated with regular business cycles, interruptions in the borrower's earning power, and errors made in evaluating the borrower's willingness or ability to meet mortgage obligations;

ii. Defaults caused by adverse local economic conditions;

iii. Widespread defaults caused by a severe depression in the U.S. economy.

Loss Incidence

12. Losses are incurred over the exposure period which runs for the term of the mortgage. However, loss incidence peaks in the earlier years. When a loan has been delinquent two to four months, the policy requires the lender to notify the insurer. The lender generally agrees to institute foreclosure proceedings six to nine months from the date of delinquency. Foreclosure can require an additional 18 months which means a considerable delay between the delinquency and the presentation of the claim. Without adverse economic conditions, most delinquencies do not result in a loss payment. Once a claim is presented, payment normally is made within one or two months and ultimate loss costs can be known relatively quickly.

Pool Insurance

13. Mortgage guaranty insurance may be provided on pools of mortgage loans. Typically, pool insurance supports mortgage-backed securities or group sales. Unlike other pool or group products, each loan is individually underwritten.

14. Pool insurance may be provided on loans that are already insured by primary insurance, in which case the pool insurance provides an additional level of coverage, or it may be provided on loans without primary insurance (usually loans with loan-to-value ratios below 80%). Generally, pool insurance provides 100% coverage and includes a stop-loss limit of liability which may range from 5% to 20% of the initial aggregate principal balance. Because of regulatory requirements in some states, pool insurance usually uses participating reinsurance arrangements to limit the exposure of any one mortgage insurer of a pool of loans to 25% of each mortgage insured.

15. Pool insurance policies are not cancelable by the insurer except for nonpayment of premium. These policies may be written on mortgage pools having terms of up to 30 years. However, the average policy life is 8 to 12 years.

16. Upon default, the insurer has the same options as with individual insured mortgage loans. However, pool insurance loss payments are reduced by settlements under primary insurance and subject to the stop-loss limit.

17. Three kinds of mortgage-backed securities which use pool insurance are:

a. Mortgage-backed bonds—Issued by banks, savings and loan associations and other mortgage lenders as a general obligation of the issuing institution. These bonds are collateralized by a pool of mortgages and have a stated rate of return and maturity date;

b. Mortgage revenue bonds—Issued by state and local housing authorities to support housing affordability for targeted income groups;

c. Mortgage pass-through certificates—Issued by banks, savings and loan associations, mortgage bankers, and others providing an undivided interest in a pool of mortgages with principal and interest payment passed to the certificate holder as received.

Premium Revenue Recognition

18. Written premium shall be recorded in accordance with *SSAP No. 53—Property Casualty Contracts—Premiums*. Premium revenue shall be earned as follows:

a. For monthly premium plans, revenues shall be earned in the month to which they relate;

b. For annual premium plans, revenues shall be earned on a pro rata basis over the applicable year;

c. For single premium plans, revenues shall be earned over the policy life in relation to the expiration of risk;

d. Additional first year premiums or initial renewal premiums on nonlevel policies shall be deferred and amortized to income over the anticipated premium paying period of the policy in relation to the expiration of risk.

Unpaid Losses and Loss Adjustment Expense Recognition

19. Unpaid losses and loss adjustment expenses shall be recognized in accordance with *SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses*. For mortgage guaranty insurance contracts, the default shall be considered the incident that gives rise to a claim as discussed in SSAP No. 55. If a claim is ultimately presented, the date of default shall be considered the loss incurred date.

20. The process for estimating the liability shall include projections for losses that have been reported as well as those that have been incurred but not reported. The estimates shall be made based on historical data, trends, economic factors, and other statistical information including paid claims, reported losses, insurance in force statistics, and risk statistics.

21. Real estate and mortgages are acquired by mortgage guaranty insurers to mitigate losses. These assets shall be shown on the balance sheet at the lower of cost or net realizable value, net of encumbrances. Gains or losses from the holding or disposition of these assets shall be recorded as a component of losses incurred. Rental income or holding expenses shall be included in loss adjustment expenses.

Contingency Reserve

22. In addition to the unearned premium reserve, mortgage guaranty insurers shall maintain a liability referred to as a statutory contingency reserve. The purpose of this reserve is to protect policyholders against loss during periods of extreme economic contraction. The annual addition to the liability shall equal 50% of the earned premium from mortgage guaranty insurance contracts and shall be maintained for ten years regardless of the coverage period for which premiums were paid. With commissioner

approval, when required by statute, the contingency reserve may be released in any year in which actual incurred losses exceed 35% of the corresponding earned premiums. Any such reductions shall be made on a first-in, first-out basis. Changes in the reserve shall be recorded directly to unassigned funds (surplus).

Premium Deficiency Reserve

23. When the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs exceed the recorded unearned premium reserve, contingency reserve, and the estimated future renewal premium on existing policies, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency with a corresponding charge to operations. Commissions and other acquisition costs need not be considered in the premium deficiency analysis to the extent they have been expensed. If an insurer utilizes anticipated investment income as a factor in the premium deficiency calculation, disclosure of such shall be made in the financial statements.

U.S. Mortgage Guaranty Tax and Loss Bonds

24. To obtain a current federal income tax benefit derived from annual additions to the statutory contingency reserve (for tax purposes, the mortgage guaranty account), mortgage guaranty insurers must purchase tax and loss bonds to the extent of the tax benefits. These bonds are noninterest bearing obligations of the U.S. Treasury and mature 10 years after issue. The usual purpose of tax and loss bonds is to satisfy taxes that will be due in 10 years when the tax benefit is reversed; however, the bonds may be redeemed earlier in the event of excess underwriting losses. These bonds are reported as admitted assets allowing mortgage insurers to conserve capital. In accordance with *SSAP No. 101—Income Taxes*, temporary differences (as defined in that statement) do not include amounts attributable to the statutory contingency reserve to the extent that "tax and loss" bonds have been purchased.

Contingency Reserve (for Tax Purposes, the Mortgage Guaranty Account)

25. Under IRS Code Section 832(e), mortgage guaranty insurers are permitted to deduct the annual addition to the contingency reserve from gross income. The tax deduction is generally an amount equal to (a) 50% of earned premium, or (b) taxable income as computed prior to this special deduction if less than 50% of earned premium. Annual deductions not utilized for tax purposes during the current period may be carried forward for eight years on a basis similar to net operating losses. The amount deducted must be restored to gross income after ten years; however, it may be restored to gross income at an earlier date in the event of a taxable net operating loss.

26. The tax deduction is permitted only if special U.S. Mortgage Guaranty Tax and Loss Bonds are purchased in an amount equal to the tax benefit derived from the deduction. Upon redemption the tax and loss bonds can be used to satisfy the additional tax liability that arises when the deduction is restored to income.

Disclosures

27. Mortgage guaranty insurers shall make all disclosures required by other statements within the *Accounting Practices and Procedures Manual*, including but not limited to the requirements of SSAP No. 55, and *SSAP No. 1—Accounting Policies, Risks & Uncertainties, and Other Disclosures*.

28. Refer to the Preamble for further discussion regarding disclosure requirements.

Effective Date and Transition

29. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 88—Mortgage Guaranty Insurance*

Statement of Statutory Accounting Principles No. 62 – Revised

Property and Casualty Reinsurance

STATUS

Type of Issue	Common Area
Issued	Finalized March 13, 2000; Substantively revised December 5, 2009, and December 18, 2012; November 15, 2018
Effective Date	January 1, 2001; Substantive revisions in paragraphs 36.e., 102-105 and 120 (detailed in Issue Paper No. 137) effective January 1, 2010; Certified reinsurer changes effective December 31, 2012; Substantive revisions adopted November 2018 are effective January 1, 2019
Affects	Supersedes SSAP No. 75 with guidance incorporated August 2011; Nullifies and incorporates INT 02-06 and INT 02-09
Affected by	No other pronouncements
Interpreted by	INT 02-22; INT 03-02
Relevant Appendix A Guidance	A-440; A-785

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for property and casualty reinsurance. A wide range of methods for structuring reinsurance arrangements can be employed depending on the requirements of individual companies. This statement deals with the more commonly employed methods.

SUMMARY CONCLUSION

General

2. Reinsurance is the assumption by an insurer of all or part of a risk undertaken originally by another insurer. The transaction whereby a reinsurer cedes all or part of the reinsurance it has assumed to another reinsurer is known as a retrocession.

3. Reinsurance has many beneficial purposes. Among them are that it enables an insurance entity to (a) expand its capacity, (b) share large risks with other insurers, (c) spread the risk of potential catastrophes and stabilize its underwriting results, (d) finance expanding volume by sharing the financial burden of reserves, (e) withdraw from a line or class of business, and (f) reduce its net liability to amounts appropriate to its financial resources.

4. Reinsurance agreements are generally classified as treaty or facultative. Treaty reinsurance refers to an arrangement involving a class or type of business written, while facultative reinsurance involves individual risks offered and accepted.

5. Reinsurance coverage can be pro rata (i.e., proportional reinsurance) where the reinsurer shares a pro rata portion of the losses and in the same proportion as it shares premium of the ceding entity or excess of loss (i.e., non-proportional) where the reinsurer, subject to a specified limit, indemnifies the ceding entity against the amount of loss in excess of a specified retention. Most reinsurance agreements fall into one of the following categories:

a. Treaty Reinsurance Contracts—Pro Rata:

i. Quota Share Reinsurance—The ceding entity is indemnified against a fixed percentage of loss on each risk covered in the agreement;

ii. Surplus Share Reinsurance—The ceding entity establishes a retention or "line" on the risks to be covered and cedes a fraction or a multiple of that line on each policy subject to a specified maximum cession;

b. Treaty Reinsurance Contracts—Excess of Loss:

i. Excess Per Risk Reinsurance—The ceding entity is indemnified, subject to a specified limit, against the amount of loss in excess of a specified retention with respect to each risk covered by a treaty;

ii. Aggregate Excess of Loss Reinsurance—The ceding entity is indemnified against the amount by which the ceding entity's net retained losses incurred during a specific period exceed either a predetermined dollar amount or a percentage of the entity's subject premiums for the specific period subject to a specified limit;

c. Treaty Reinsurance Contracts—Catastrophe: The ceding entity is indemnified, subject to a specified limit, against the amount of loss in excess of a specified retention with respect to an accumulation of losses resulting from a catastrophic event or series of events;

d. Facultative Reinsurance Contracts—Pro Rata: The ceding entity is indemnified for a specified percentage of losses and loss expenses arising under a specific insurance policy in exchange for that percentage of the policy's premium;

e. Facultative Reinsurance Contracts—Excess of Loss: The ceding entity is indemnified, subject to a specified limit, for losses in excess of its retention with respect to a particular risk.

Characteristics of Reinsurance Agreements

6. Common contract provisions that may affect accounting practices include:

a. Reporting responsibility of the ceding entity—Details required and time schedules shall be established;

b. Payment terms—Time schedules, currencies intended, and the rights of the parties to withhold funds shall be established;

c. Payment of premium taxes—Customarily the responsibility of the ceding entity, a recital of nonliability of the reinsurer may be found;

d. Termination—May be on a cut-off or run-off basis. A cut-off provision stipulates that the reinsurer shall not be liable for loss as a result of occurrences taking place after the date of termination. A run-off provision stipulates that the reinsurer shall remain liable for loss under reinsured policies in force at the date of termination as a result of occurrences taking

place after the date of termination until such time as the policies expire or are canceled; and

e. Insolvency clause—Provides for the survival of the reinsurer's obligations in the event of insolvency of the ceding entity, without diminution because of the insolvency.

7. Reinsurance contracts shall not permit entry of an order of rehabilitation or liquidation to constitute an anticipatory breach by the reporting entity, nor grounds for retroactive revocation or retroactive cancellation of any contracts of the reporting entity.

Required Terms for Reinsurance Agreements

8. In addition to credit for reinsurance requirements applicable to reinsurance transactions generally, no credit or deduction from liabilities shall be allowed by the ceding entity for reinsurance recoverable where the agreement was entered into after the effective date of these requirements (see paragraphs 129 and 130) unless each of the following conditions is satisfied:

a. The agreement must contain an acceptable insolvency clause;

b. Recoveries due the ceding entity must be available without delay for payment of losses and claim obligations incurred under the agreement, in a manner consistent with orderly payment of incurred policy obligations by the ceding entity;

c. The agreement shall constitute the entire contract between the parties and must provide no guarantee of profit, directly or indirectly, from the reinsurer to the ceding entity or from the ceding entity to the reinsurer;

d. The agreement must provide for reports of premiums and losses, and payment of losses, no less frequently than on a quarterly basis, unless there is no activity during the period. The report of premiums and losses shall set forth the ceding entity's total loss and loss expense reserves on the policy obligations subject to the agreement, so that the respective obligations of the ceding entity and reinsurer will be recorded and reported on a basis consistent with this statement;

e. The agreement must include a proper reinsurance intermediary clause, if applicable, which stipulates that the credit risk for the intermediary is carried by the assuming insurance entity;

f. With respect to reinsurance contracts involving a certified reinsurer, the agreement must include a proper funding clause, which requires the certified reinsurer to provide and maintain security in an amount sufficient to avoid the imposition of any financial statement penalty on the ceding insurance entity for reinsurance ceded to the certified reinsurer. However, this does not preclude negotiation for higher contractual collateral amounts; and

g. With respect to retroactive reinsurance agreements, the following additional conditions apply:

i. The consideration to be paid by the ceding entity for the retroactive reinsurance must be a sum certain stated in the agreement;

ii. Direct or indirect compensation to the ceding entity or reinsurer is prohibited;

iii. Any provision for subsequent adjustment on the basis of actual experience in regard to policy obligations transferred, or on the basis of any other formula, is prohibited in connection with a retroactive reinsurance transaction, except that

provision may be made for the ceding entity's participation in the reinsurer's ultimate profit, if any, under the agreement;

iv. A retroactive reinsurance agreement shall not be canceled or rescinded without the approval of the commissioner of the domiciliary state of the ceding entity.

Reinsurance Agreements with Multiple Cedents

9. Reinsurance agreements with multiple cedents require allocation agreements. The allocation agreement can be part of the reinsurance agreement or a separate agreement. If the agreement has multiple cedents:

a. The allocation must be in writing and

b. The terms of the allocation agreement must be fair and equitable.

Reinsurance Contracts Must Include Transfer of Risk

10. The essential ingredient of a reinsurance contract is the transfer of risk[1]. The essential element of every true reinsurance agreement is the undertaking by the reinsurer to indemnify the ceding entity, i.e., reinsured entity, not only in form but in fact, against loss or liability by reason of the original insurance. Unless the agreement contains this essential element of risk transfer, no credit shall be recorded.(INT 02-22)

11. Insurance risk involves uncertainties about both (a) the ultimate amount of net cash flows from premiums, commissions, claims, and claims settlement expenses (underwriting risk) and (b) the timing of the receipt and payment of those cash flows (timing risk). Actual or imputed investment returns are not an element of insurance risk. Insurance risk is fortuitous—the possibility of adverse events occurring is outside the control of the insured.

12. Determining whether an agreement with a reinsurer provides indemnification against loss or liability (transfer of risk) relating to insurance risk requires a complete understanding of that contract and other contracts or agreements between the ceding entity and related reinsurers. A complete understanding includes an evaluation of all contractual features that (a) limit the amount of insurance risk to which the reinsurer is subject (e.g., experience refunds, cancellation provisions, adjustable features, or additions of profitable lines of business to the reinsurance contract) or (b) delay the timely reimbursement of claims by the reinsurer (e.g., payment schedules or accumulating retentions from multiple years).

13. Indemnification of the ceding entity against loss or liability relating to insurance risk in reinsurance requires both of the following:

a. The reinsurer assumes significant insurance risk under the reinsured portions of the underlying insurance agreements; and

b. It is reasonably possible that the reinsurer may realize a significant loss from the transaction.

The conditions are independent and the ability to meet one does not mean that the other has been met. A substantive demonstration that both conditions have been met is required to transfer risk.

14. The reference in paragraph 13.a. acknowledges that a ceding entity may reinsure only part of the risks associated with the underlying contracts. For example, a proportionate share of all risks or only

[1] Exhibit A Questions and Answers, questions 6-19 provide additional risk transfer implementation guidance.

specified risks may be reinsured. The conditions for reinsurance accounting are evaluated in relation to the reinsured portions of the underlying insurance contracts, rather than all aspects of those contracts.

15. The word "timely" is used in paragraph 12 in the ordinary temporal sense to refer to the length of time between payment of the underlying reinsured claims and reimbursement by the reinsurer. While the test for reasonable possibility of significant loss to the reinsurer provides for a present-value-based assessment of the economic characteristics of the reinsurance contract, the concept of timely reimbursement relates to the transfer of insurance risk (the condition in paragraph 13.a.), not the reasonable possibility of significant loss (the condition in paragraph 13.b.). Accordingly, timely reimbursement shall be evaluated based solely on the length of time between payment of the underlying reinsured claims and reimbursement by the reinsurer.

16. Whether underwriting risk has transferred to the reinsurer depends on how much uncertainty about the ultimate amount of net cash flows from premiums, commissions, claims, and claim settlement expenses paid under a contract has been transferred to the reinsurer. A reinsurer shall not have assumed significant insurance risk under the reinsured contracts if the probability of a significant variation in either the amount or timing of payments by the reinsurer is remote. Implicit in this condition is the requirement that both the amount and timing of the reinsurer's payments depend on and directly vary with the amount and timing of claims settled by the ceding entity. Accordingly, the significance of the amount of underwriting risk transferred shall be evaluated in relation to the ceding entity's claims payments. Contractual provisions that delay timely reimbursement to the ceding entity prevent this condition from being met.

17. The ceding entity's evaluation of whether it is reasonably possible for a reinsurer to realize a significant loss from the transaction shall be based on the present value of all cash flows between the ceding and assuming companies under reasonably possible outcomes, without regard to how the individual cash flows are described or characterized. An outcome is reasonably possible if its probability is more than remote. The same interest rate shall be used to compute the present value of cash flows for each reasonably possible outcome tested. A constant interest rate shall be used in determining those present values because the possibility of investment income varying from expectations is not an element of insurance risk. Judgment is required to identify a reasonable and appropriate interest rate. To be reasonable and appropriate, that interest rate shall reflect both of the following:

a. The expected timing of payments to the reinsurer; and

b. The duration over which those cash flows are expected to be invested by the reinsurer.

18. Significance of loss shall be evaluated by comparing the present value of all cash flows, determined as described in paragraph 17, with the present value of the amounts paid or deemed to have been paid to the reinsurer. If, based on this comparison, the reinsurer is not exposed to the reasonable possibility of significant loss, the ceding entity shall be considered indemnified against loss or liability relating to insurance risk only if substantially all of the insurance risk relating to the reinsured portions of the underlying insurance agreements has been assumed by the reinsurer. In this narrow circumstance, the reinsurer's economic position is virtually equivalent to having written the insurance contract directly. This condition is met only if insignificant insurance risk is retained by the ceding entity on the retained portions of the underlying insurance contracts, so that the reinsurer's exposure to loss is essentially the same as that of the reporting entity. The assessment of that condition shall be made by comparing both of the following:

a. The net cash flows of the reinsurer under the reinsurance contract; and

b. The net cash flows of the ceding entity on the reinsured portions of the underlying insurance contracts.

If the economic position of the reinsurer relative to the insurer cannot be determined, the contract shall not qualify under the exception in this paragraph[2].

19. An extremely narrow and limited exemption is provided for contracts that reinsure either an individual risk or an underlying book of business that is inherently profitable. When substantially all of the insurance risk relating to the reinsured portions of the underlying insurance contracts has been assumed by the reinsurer, the contract meets the conditions for reinsurance accounting. To qualify under this exception, no more than insignificant insurance risk on the reinsured portions of the underlying insurance contracts may be retained by the ceding entity.

20. Payment schedules and accumulating retentions from multiple years are contractual features inherently designed to delay the timing of reimbursement to the ceding entity. Regardless of what a particular feature might be called, any feature that can delay timely reimbursement violates the conditions for reinsurance accounting. Transfer of insurance risk requires that the reinsurer's payment to the ceding entity depend on and directly vary with the amount and timing of claims settled under the reinsured contracts. Contractual features that can delay timely reimbursement prevent this condition from being met. Therefore, any feature that may affect the timing of the reinsurer's reimbursement to the ceding entity shall be closely scrutinized.

21. Contracts that reinsure insurance risks over a significantly longer period than the underlying insurance contract are, in substance, financing transactions, if any of the following conditions exist:

a. Premiums are deferred over a period beyond the term of the underlying insurance contracts;

b. Losses are recognized in a different period than the period in which the event causing the loss takes place; or

c. Both events, 21.a. and 21.b., occur at different points in time.

Contracts that are in substance financing receive deposit accounting treatment.

Accounting for Reinsurance

22. Reinsurance recoverables shall be recognized in a manner consistent with the liabilities (including estimated amounts for claims incurred but not reported) relating to the underlying reinsured contracts. Assumptions used in estimating reinsurance recoverables shall be consistent with those used in estimating the related liabilities. Certain assets and liabilities are created by entities when they engage in reinsurance contracts. Reinsurance assets meet the definition of assets as defined by *SSAP No. 4—Assets and Nonadmitted Assets* and are admitted to the extent they conform to the requirements of this statement.

23. Accounting for members of a reinsurance pool shall follow the accounting for the pool member which issued the underlying policy.(INT 03-02) Specific accounting rules for underwriting pools and associations are addressed in *SSAP No. 63—Underwriting Pools*.

24. Reinsurance recoverable on loss payments is an admitted asset. Notwithstanding the fact that reinsurance recoverables on paid losses may meet the criteria for offsetting under the provisions of *SSAP No. 64—Offsetting and Netting of Assets and Liabilities*, reinsurance recoverables on paid losses shall be reported as an asset without any available offset. Unauthorized reinsurance and reinsurance ceded to certified reinsurers is included in this asset and reflected separately as a liability to the extent required. Penalty for overdue authorized reinsurance shall be reflected as a liability.

[2] See additional detail on this topic in Exhibit A, question 19.

25. Funds held or deposited with reinsured companies, whether premiums withheld as security for unearned premium and outstanding loss reserves or advances for loss payments, are admitted assets provided they do not exceed the liabilities they secure and provided the reinsured is solvent. Those funds which are in excess of the liabilities, and any funds held by an insolvent reinsured shall be nonadmitted.

26. Prospective reinsurance is defined as reinsurance in which a reinsurer agrees to reimburse a ceding entity for losses that may be incurred as a result of future insurable events covered under contracts subject to the reinsurance. Retroactive reinsurance is defined as reinsurance in which a reinsurer agrees to reimburse a ceding entity for liabilities incurred as a result of past insurable events covered under contracts subject to the reinsurance. A reinsurance agreement may include both prospective and retroactive reinsurance provisions.

27. The distinction between prospective and retroactive reinsurance agreements is based on whether the agreement reinsures future or past insured events covered by the underlying insurance policies. For example, in occurrence-based insurance, the insured event is the occurrence of a loss covered by the insurance contract. In claims-made insurance, the insured event is the reporting to the insurer, within the period specified by the policy, of a claim for a loss covered by the insurance agreement. A claims-made reinsurance contract that reinsures claims asserted to the reinsurer in a future period as a result of insured events that occurred prior to entering into the reinsurance agreement is a retroactive agreement. (However, a reinsurance agreement that reinsures claims reported to an insurer that are covered under currently effective claims-made insurance policies is a prospective reinsurance agreement.)

28. It is not uncommon for a reinsurance arrangement to be initiated before the beginning of a policy period but not finalized until after the policy period begins. Whether there was agreement in principle at the beginning of the policy period and, therefore, the agreement is substantively prospective shall be determined based on the facts and circumstances. However, except as respects business assumed by a U.S. reinsurer from ceding companies domiciled outside the U.S. and not affiliated with such reinsurer, or business assumed by a U.S. reinsurer where either the lead reinsurer or a majority of the capacity on the agreement is domiciled outside the U.S. and is not affiliated with such reinsurer, if an agreement entered into, renewed or amended on or after January 1, 1994 has not been finalized, reduced to a written form and signed by the parties within nine months after the commencement of the policy period covered by the reinsurance arrangement, then the arrangement is presumed to be retroactive and shall be accounted for as a retroactive reinsurance agreement. This presumption shall not apply to: (a) facultative reinsurance contracts, nor to (b) reinsurance agreements with more than one reinsurer which are signed by the lead reinsurer (i.e., the reinsurer setting the terms of the agreement for the reinsurers) within nine months after the commencement of the policy period covered by the reinsurance agreement, nor to (c) reinsurance agreements with more than one reinsurer (whether signed by the lead reinsurer or not) which were entered into, renewed or amended on or before December 31, 1996, (and which were not renewed or amended after that date) if reinsurers representing more than 50% of the capacity on the agreement have signed cover notes, placement slips or similar documents describing the essential terms of coverage and exclusions within nine months after the commencement of the policy period covered by the reinsurance arrangement. Also exempt from this presumption are reinsurance agreements where one of the parties is in conservation, rehabilitation, receivership or liquidation proceedings.

29. Prospective and retroactive provisions included within a single agreement shall be accounted for separately. If separate accounting for prospective and retroactive provisions included within a single agreement is impracticable, the agreement shall be accounted for as a retroactive agreement provided the conditions for reinsurance accounting are met.

Accounting for Prospective Reinsurance Agreements

30. Amounts paid for prospective reinsurance that meet the conditions for reinsurance accounting shall be reported as a reduction of written and earned premiums by the ceding entity and shall be earned over the remaining contract period in proportion to the amount of reinsurance protection provided or, if applicable,

until the reinsurer's maximum liability under the agreement has been exhausted. If the amounts paid are subject to adjustment and can be reasonably estimated, the basis for amortization shall be the estimated ultimate amount to be paid. Reinstatement premium, if any, shall be earned over the period from the reinstatement of the limit to the expiration of the agreement.

31. Changes in amounts of estimated reinsurance recoverables shall be recognized as a reduction of gross losses and loss expenses incurred in the current period statement of income. Reinsurance recoverables on paid losses shall be reported as an asset, reinsurance recoverables on loss and loss adjustment expense payments, in the balance sheet. Reinsurance recoverables on unpaid case-basis and incurred but not reported losses and loss adjustment expenses shall be netted against the liability for gross losses and loss adjustment expenses.

32. Prospective reinsurance agreements that meet the conditions for reinsurance accounting shall only reflect reinsurance credit for the portion of risk which is ceded. Provisions that would limit the reinsurer's losses (e.g., a deductible, a loss ratio corridor, a loss cap, an aggregate limit or any similar provisions) caused by any applicable risk limiting provision(s) shall be reflected adjustments to ceded premiums, commissions or losses. Reporting entities shall only take credit for reinsurance, i.e., record a reinsurance recoverable, for non-proportional reinsurance when and to the extent that incurred losses on the underlying subject business exceed the attachment point of the applicable reinsurance contract(s).

Accounting for Retroactive Reinsurance Agreements

33. Certain reinsurance agreements which transfer both components of insurance risk cover liabilities which occurred prior to the effective date of the agreement. Due to potential abuses involving the creation of surplus to policyholders and the distortion of underwriting results, special accounting treatment for these agreements is warranted.

34. All retroactive reinsurance agreements entered into, renewed or amended on or after January 1, 1994 (including subsequent development of such transactions) shall be accounted for and reported in the following manner:

a. The ceding entity shall record, without recognition of the retroactive reinsurance, loss and loss expense reserves on a gross basis on the balance sheet and in all schedules and exhibits;

b. The assuming entity shall exclude the retroactive reinsurance from loss and loss expense reserves and from all schedules and exhibits;

c. The ceding entity and the assuming entity shall report by write-in item on the balance sheet, the total amount of all retroactive reinsurance, identified as retroactive reinsurance reserve ceded or assumed, recorded as a contra-liability by the ceding entity and as a liability by the assuming entity;

d. The ceding entity shall, by write-in item on the balance sheet, restrict surplus resulting from any retroactive reinsurance as a special surplus fund, designated as special surplus from retroactive reinsurance account;

e. The surplus gain from any retroactive reinsurance shall not be classified as unassigned funds (surplus) until the actual retroactive reinsurance recovered exceeds the consideration paid;

f. The special surplus from retroactive reinsurance account for each respective retroactive reinsurance agreement shall be reduced at the time the ceding entity begins to recover funds from the assuming entity in amounts exceeding the consideration paid by the ceding entity under such agreement, or adjusted as provided in paragraph 34.j.;

g. For each agreement, the reduction in the special surplus from retroactive reinsurance account shall be limited to the lesser of (i) the actual amount recovered in excess of consideration paid or (ii) the initial surplus gain resulting from the respective retroactive reinsurance agreement. Any remaining balance in the special surplus from retroactive reinsurance account derived from any such agreement shall be returned to unassigned funds (surplus) upon elimination of all policy obligations subject to the retroactive reinsurance agreement;

h. The ceding entity shall report the initial gain arising from a retroactive reinsurance transaction (i.e., the difference between the consideration paid to the reinsurer and the total reserves ceded to the reinsurer) as a write-in item on the statement of income, to be identified as Retroactive Reinsurance Gain and included under Other Income;

i. The assuming entity shall report the initial loss arising from a retroactive reinsurance transaction, as defined in the preceding paragraph 34.g., as a write-in item on the statement of income, to be identified as Retroactive Reinsurance Loss and included under Other Income;

j. Any subsequent increase or reduction in the total reserves ceded under a retroactive reinsurance agreement shall be reported in the manner described in the preceding paragraphs 34.h. and 34.i., in order to recognize the gain or loss arising from such increase or reduction in reserves ceded. The Special Surplus from Retroactive Reinsurance Account write-in entry on the balance sheet shall be adjusted, upward or downward, to reflect such increase or reduction in reserves ceded. The Special Surplus from Retroactive Reinsurance Account write-in entry shall be equal to or less than the total ceded reserves under all retroactive reinsurance agreements in-force as of the date of the financial statement. Special surplus arising from a retroactive reinsurance transaction shall be considered to be earned surplus (i.e., transferred to unassigned funds (surplus)) only when cash recoveries from the assuming entity exceed the consideration paid by the ceding entity as respects such retroactive reinsurance transaction; and

k. The consideration paid for a retroactive reinsurance agreement shall be reported as a decrease in ledger assets by the ceding entity and as an increase in ledger assets by the assuming entity.

(For an illustration of ceding entity accounting entries see question 31 in Exhibit A.)

35. Portfolio reinsurance is the transfer of an insurer's entire liability for in force policies or outstanding losses, or both, of a segment of the insurer's business. Loss portfolio transactions are to be accounted for as retroactive reinsurance.

36. The accounting principles for retroactive reinsurance agreements in paragraph 34 shall not apply to the following types of agreements (which shall be accounted for as prospective reinsurance agreements unless otherwise provided in this statement):

a. Structured settlement annuities for individual claims purchased to implement settlements of policy obligations;

b. Novations, (i.e., (i) transactions in which the original direct insurer's obligations are completely extinguished, resulting in no further exposure to loss arising on the business novated or (ii) transactions in which the original assuming entity's obligations are completely extinguished) resulting in no further exposure to loss arising on the business novated, provided that (1) the parties to the transaction are not affiliates (or if affiliates, that the transaction has the prior approval of the domiciliary regulators of the parties) and

(2) the accounting for the original reinsurance agreement will not be altered from retroactive to prospective;

c. The termination of, or reduction in participation in, reinsurance treaties entered into in the ordinary course of business;

d. Intercompany reinsurance agreements, and any amendments thereto, among companies 100% owned by a common parent or ultimate controlling person provided there is no gain in surplus as a result of the transaction; or

e. Reinsurance/retrocession agreements that meet the criteria of property/casualty run-off agreements described in paragraphs 102-105.

37. Retroactive reinsurance agreements resulting in surplus gain to the ceding entity (with or without risk transfer) entered into between affiliates or between insurers under common control (as those terms are defined in Appendix A-440) shall be reported as follows:

a. The consideration paid by the ceding entity shall be recorded as a deposit and reported as a nonadmitted asset; and

b. No deduction shall be made from loss and loss adjustment expense reserves on the ceding entity's balance sheet, schedules, and exhibits.

38. The accounting and reporting provisions applicable to retroactive reinsurance apply to all transactions transferring liabilities in connection with a court-ordered rehabilitation, liquidation, or receivership. The requirement to include stipulated contract provisions in the reinsurance agreements shall not apply to these transactions, with written approval of the ceding entity's domiciliary commissioner.

39. Novations meeting the requirements of paragraph 36.b. shall be accounted for as prospective reinsurance agreements. The original direct insurer, or the original assuming insurer, shall report amounts paid as a reduction of written and earned premiums, and unearned premiums to the extent that premiums have not been earned. Novated balances (e.g., loss and loss adjustment expense reserves) shall be written off through the accounts, exhibits, and schedules in which they were originally recorded. The assuming insurer shall report amounts received as written and earned premiums, and obligations assumed as incurred losses in the statement of income.

Deposit Accounting

40. To the extent that a reinsurance agreement does not, despite its form, transfer both components of insurance risk, all or part of the agreement shall be accounted for and reported as deposits in the following manner:

a. At the outset of the reinsurance agreement, the net consideration paid by the ceding entity (premiums less commissions or other allowances) shall be recorded as a deposit by the ceding company and as a liability by the assuming entity. The deposit shall be reported as an admitted asset by the ceding company if (i) the assuming company is licensed, accredited or otherwise qualified in the ceding company's state of domicile as described in Appendix A-785 or (ii) there are funds held by or on behalf of the ceding company which meet the requirements of paragraph 19 of Appendix A-785;

b. At subsequent reporting dates, the amount of the deposit/liability shall be adjusted by calculating the effective yield on the deposit agreement to reflect actual payments to date (receipts and disbursements shall be recorded through the deposit/liability accounts) and

expected future payments (as discussed below), with a corresponding credit or charge to interest income or interest expense;

c. The calculation of the effective yield shall use the estimated amount and timing of cash flows. If a change in the actual or estimated timing or amount of cash flows occurs, the effective yield shall be recalculated to reflect the revised actual or estimated cash flows. The deposit shall be adjusted to the amount that would have existed at the reporting date had the new effective yield been applied since the inception of the reinsurance agreement. Changes in the carrying amount of the deposit asset/liability resulting from changes in the effective yield shall be recorded as interest income or interest expense;

d. It shall be assumed that any cash transactions for the settlement of losses will reduce the asset/liability accounts by the amount of the cash transferred. When the remaining losses are revalued upward, an increase in the deposit liability shall be recorded as interest expense – by the assuming company. Conversely, the ceding company shall increase its deposit (asset) with an offsetting credit to interest income; and increase its outstanding loss liability with an offsetting charge to incurred losses;

e. No deduction shall be made from the loss and loss adjustment expense reserves on the ceding company's Statement of Financial Position, schedules, and exhibits;

f. The assuming company shall record net consideration to be returned to the ceding company as a liability.

(For an illustration of the provisions of paragraph 40, see Exhibit C)

41. Deposit accounting shall not be used to avoid loss recognition that would otherwise be required. For example, if the ceding entity has no future coverage relating to the deposit with the reinsurer, the deposit is not recoverable.

Assumed Reinsurance

42. Reinsurance premiums receivable at the end of the accounting period are combined with direct business receivables and reported as agents' balances or uncollected premiums. Where the ceding entity withholds premium funds pursuant to the terms of the reinsurance agreement, such assets shall be shown by the assuming entity as funds held by or deposited with reinsured companies. Reporting entities shall record any interest earned or receivable on the funds withheld as a component of aggregate write-ins for miscellaneous income.

43. If the assuming entity receives reinsurance premium prior to the effective date of the reinsurance contract, consistent with *SSAP No. 53—Property Casualty Contracts-Premiums*, paragraph 15, advance premiums shall be reported as a liability in the statutory financial statement and not considered income until the effective date of the coverage. Such amounts are not included in written premium or the unearned premium reserve. If the assuming entity receives reinsurance premium after the effective date of the reinsurance contract but prior to the due date, the amount received shall be reported as a reduction of the asset for deferred but not yet due (earned but unbilled premiums).

44. Reinsurance premiums more than 90 days overdue shall be nonadmitted except (a) to the extent the assuming entity maintains unearned premium and loss reserves as to the ceding entity, under principles of offset accounting as discussed in SSAP No. 64, or (b) where the ceding entity is licensed and in good standing in assuming entity's state of domicile. Reinsurance premiums are due pursuant to the original contract terms (as the agreement stood on the date of execution). In the absence of a specific contract date, reinsurance premiums will be deemed due thirty (30) days after the date on which (i) notice or demand of premium due is provided to the ceding entity or (ii) the assuming entity books the premium (see *SSAP*

No. 6—Uncollected Premium Balances, Bills Receivable for Premiums, and Amounts Due From Agents and Brokers).

45. A lag will develop between the time of the entry of the underlying policy transaction on the books of the ceding entity and the transmittal of information and entry on the books of the assuming entity. Assuming companies shall estimate unreported premiums and related costs to the extent necessary to prevent material distortions in the loss development contained in the assuming entity's annual statement schedules where calendar year premiums are compared to accident year losses.

46. Proportional reinsurance (i.e., first dollar pro rata reinsurance) premiums shall be allocated to the appropriate annual statement lines of business in the Underwriting and Investment exhibits. Non-proportional assumed reinsurance premiums shall be classified as reinsurance under the appropriate subcategories.

47. Assumed retroactive reinsurance premiums shall be excluded from all schedules and exhibits as addressed in paragraph 34.

48. Amounts payable by reinsurers on losses shall be classified as unpaid losses. Assumed reinsurance payable on paid losses shall be classified as a separate liability item on the balance sheet. IBNR losses on assumed reinsurance business shall be netted with ceded losses on the balance sheet and listed separately by annual statement line of business in the Underwriting and Investment exhibits.

Ceded Reinsurance

49. Ceded reinsurance premiums payable (net of ceding commission) shall be classified as a liability. Consistent with SSAP No. 64, ceded reinsurance premiums payable may be deducted from amounts due from the reinsurer, such as amounts due on assumed reinsurance, when a legal right of offset exists.

50. With regard to reinsurance premium paid prior to the effective date of the contract, the ceding entity shall reflect the prepaid item as a write-in admitted asset and it should not be recognized in the income statement until the effective date of the coverage. Such amounts are not included in ceded written premiums or ceded unearned premium but should be subject to impairment analysis. With regard to reinsurance premium paid by ceding entity after the reinsurance contract is in effect but prior to the due date, the ceding entity shall treat this item as a reduction to the liability for ceded reinsurance premiums payable. That liability reflects not only premiums unpaid but also amounts booked but deferred and not yet due.

51. Amounts withheld by the ceding entity that would otherwise be payable under the reinsurance agreement shall be reported as funds held by entity under reinsurance treaties. Reporting entities shall record any interest due or payable on the amounts withheld as a component of aggregate write-ins for miscellaneous income.

52. Ceded reinsurance transactions shall be classified in the annual statement line of business which relates to the direct or assumed transactions creating the cession or retrocession.

53. Ceded retroactive reinsurance premiums shall be excluded from all schedules and exhibits as addressed in paragraph 34.

54. Reinsurance accounting shall not be allowed for modeled trigger securitizations. Modeled trigger securitization transactions do not result in the kind of indemnification (in form and in fact) required by this SSAP, and are therefore not eligible for reinsurance accounting. Modeled trigger transactions should be evaluated as securitization transactions rather than as reinsurance transactions and should receive the accounting treatment recommended for securitization transactions.

Adjustable Features/Retrospective Rating

55. Reinsurance treaties may provide for adjustment of commission, premium, or amount of coverage, based on loss experience. The accounting for common examples is outlined in the following paragraphs:

Commission Adjustments

56. An accrual shall be maintained for the following adjustable features based upon the experience recorded for the accounting period:

a. Contingent or Straight Profit—The reinsurer returns to the ceding entity a stipulated percentage of the profit produced by the business assumed from the ceding entity. Profit may be calculated for any specified period of time, but the calculation is often based on an average over a period of years; and

b. Sliding Scale—A provisional rate of commission is paid over the course of the agreement, with a final adjustment based on the experience of the business ceded under the agreement.

Premium Adjustments

57. If the reinsurance agreement incorporates an obligation on the part of the ceding entity to pay additional premium to the assuming entity based upon loss experience under the agreement, a liability in the amount of such additional premium shall be recognized by the ceding entity during the accounting period in which the loss event(s) giving rise to the obligation to pay such additional premium occur(s). The assuming entity shall recognize an asset in a consistent manner. If the reinsurance agreement incorporates an obligation on the part of the assuming entity to refund to the ceding entity any portion of the consideration received by the assuming entity based upon loss experience under the agreement, an asset in the amount of any such refund shall be recognized by the ceding entity during the accounting period in which the loss event(s) giving rise to the obligation to make such refund occur(s). The initial provisional or deposit premium is recalculated retrospectively, based on loss experience under the agreement during a specified period of time; the calculation is often based on an average over a period of years. The assuming entity shall recognize a liability in a consistent manner.

Adjustments in the Amount of Coverage

58. The amount of coverage available for future periods is adjusted, upward or downward, based on loss experience under the agreement during a specified period of time. If the reinsurance agreement incorporates a provision under which the reinsurance coverage afforded to the ceding entity may be increased or reduced based upon loss experience under the agreement, an asset or a liability shall be recognized by the ceding entity in an amount equal to that percentage of the consideration received by the assuming entity which the increase or reduction in coverage represents of the amount of coverage originally afforded. The asset or liability shall be recognized during the accounting period in which the loss event(s) (or absence thereof) giving rise to the increase or decrease in reinsurance coverage occur(s), and shall be amortized over all accounting periods for which the increased or reduced coverage is applicable. The term "consideration" shall mean, for this purpose, the annualized deposit premium for the period used as the basis for calculating the adjustment in the amount of coverage to be afforded thereafter under the agreement.

59. The ceding entity and the assuming entity shall account for changes in coverage in the same manner as changes in other contract costs. For example, the effects of decreases in coverage without a commensurate reduction in premium shall be recognized as a loss by the ceding entity and as a gain by the assuming entity when the event causing the decrease in coverage takes place.

60. Changes in either the probability or amount of potential future recoveries are considered a change in coverage. For example, if the contract limit stayed the same but the ceding entity could not receive any

recoveries unless losses forthe industry as a whole reached a certain level, coverage has been reduced. What matters is not the specific contract provisions regarding coverage, but whether the probability or amount of potential future recoveries has increased or decreased as a result of those provisions.

Multiple-Year Retrospectively-Rated Contracts

61. Many short-duration insurance and reinsurance contracts have retrospective rating provisions. A retrospectively-rated contract is a multiple-year contract in which events in one period of the contract create rights and obligations in another. For example, if losses above a certain level occur in one contract year, premiums increase in future years unless the ceding entity compensates the reinsurer through a settlement adjustment. The ceding entity has an obligation because it must pay either the settlement adjustment or the higher future premiums.

62. An insurer (ceding entity) may enter into a multiple-year retrospectively-rated reinsurance contract with a reinsurer (assuming entity). Examples of these contracts may include transactions referred to as funded catastrophe covers. These contracts include a retrospective rating provision that provides for at least one of the following based on contract experience:

a. Changes in the amount or timing of future contractual cash flows, including premium adjustments, settlement adjustments, or refunds to the ceding entity; or

b. Changes in the contract's future coverage.

63. A critical distinguishing feature of these contracts is that part or all of the retrospective rating provision is obligatory such that the retrospective rating provision creates future rights and obligations as a result of past events. Therefore, a retrospectively-rated contract that could be cancelled without further obligation (because it does not create rights and obligations that will be realized in a future period) is excluded.

64. The principal issues in accounting for a multiple-year retrospectively-rated contract involve how to recognize and measure assets and liabilities resulting from the obligatory retrospective rating provisions. While it may be difficult for some types of multiple–year retrospectively-rated contracts to pass the risk transfer test, the recognition and measurement questions are present regardless of whether the contract transfers risk. In fact, the questions become clearly evident with contracts that meet the risk transfer test and are accounted for as reinsurance.

Multiple-Year Retrospectively-Rated Contracts by Ceding and Assuming Entities

65. To be accounted for as reinsurance, a reinsurance contract must meet all of the following conditions:

a. The contract shall not contain features that prevent the risk transfer criteria from being reasonably applied and the risk transfer criteria shall be met.

b. The ultimate premium expected to be paid or received under the contract shall be reasonably estimable and allocable in proportion to the reinsurance protection provided.

If any of these conditions are not met, a deposit method of accounting shall be applied by the ceding and assuming entities.

66. The condition in paragraph 65.a. applies to a contract and determining the substance of a contract is a judgmental matter. If an agreement with a reinsurer consists of both risk transfer and non-risk transfer coverages that have been combined into a single legal document, those coverages must be considered separately for accounting purposes. This statement does not intend for different kinds of exposures

combined in a program of reinsurance to be evaluated for risk transfer and accounted for together because that would allow contracts that do not meet the conditions for reinsurance accounting to be accounted for as reinsurance by being designated as part of a program that in total meets the conditions for reinsurance accounting.

67. Recognizing a smaller asset based on potential unfavorable loss development implies that claim liabilities are understated at the financial reporting date. Accordingly, changes in estimates of claim liabilities shall not be recognized in measuring the related asset until the change in estimate takes place.

Obligatory Retrospective Rating Provisions

68. This guidance discusses how the guidance on multiple-year retrospectively-rated contracts is based on the concept that there is a substantive difference between a contract that contains an obligatory retrospective rating provision and one that does not. This distinction is derived from *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets*, which requires recognition of liabilities (which are defined as present obligations) as of a financial reporting date but prohibits recognition of losses and expenses that will result from future events. For example, it may be a virtual certainty that an entity will pay employee salaries next year. But because there is no present obligation to pay those salaries, they are not recognized today.

69. Similarly, under SSAP No. 5R even if there is a high probability that an asset will be impaired in the future or a liability incurred in the future, the conditions for accrual have not been met because there is no present impairment or obligation to be recognized. Consistent with this principle, the guidance on multiple-year retrospectively rated contracts does not permit recognition of the effects of retrospective rating provisions unless those provisions are obligatory.

Allocation of Certain Payments Between Coverage and Past Losses

70. This guidance addresses a circumstance in which, under a multiple-year retrospectively rated reinsurance contract, the ceding entity has to make additional payments to the reinsurer but the ceding entity also receives expanded coverage. The single payment is allocated to the two separate transactions. In one transaction, the ceding entity has acquired an asset by making a payment to the reinsurer in exchange for expanded coverage. In the other, the ceding entity has incurred a loss or liability to the extent that it is reimbursing the reinsurer for past losses. Because a variety of factors may affect the value of reinsurance coverage at any point in time, the most appropriate measure of the value of additional coverage generally is the price of the initial coverage. For example, if coverage of $6.00 was acquired for a $1.00 premium, and the ceding entity would pay $4.00 more for another $6.00 of coverage if a loss occurs, the most relevant measure of the amount of premium that relates to the new coverage would be $1.00. The other $3.00 presumably is a reimbursement for the loss that has been incurred.

Contractual Termination Features

71. In some circumstances, the ceding entity will be relieved of its obligation if the reinsurer cancels the contract and only has to pay additional amounts if either:

a. The contract remains in force; or

b. The ceding entity cancels before the end of the contract term.

Unless the reinsurer has terminated the contract, the ceding entity has an obligation for the additional amounts and must recognize the related liability. The effect of termination, which is to relieve the ceding entity of its liability, shall not be recognized until termination takes place.

72. If either party entering into a new contract in consideration for canceling a retrospectively-rated contract would not have agreed to cancel the existing retrospectively-rated contract unless a new contract were entered into, the two contracts are, in effect, the same contract for purposes of measuring assets and liabilities and shall be accounted for in that way.

Impairment

73. Include as a nonadmitted asset, amounts accrued for premium adjustments on retrospectively rated reinsurance agreements with respect to which all uncollected balances due from the ceding company have been classified as nonadmitted.

74. The amount of the asset to be recognized may be affected by credit risk, and appropriate impairment shall be recognized for any amounts deemed uncollectible. The relevant recorded claim liability at that date represents the ceding entity's best estimate of the expected ultimate claim liability and is the liability that must be used in measuring the refundable amount based on contract experience to date.

Commissions

75. Commissions payable on reinsurance assumed business shall be included as an offset to Agents' Balances or Uncollected Premiums. Commissions receivable on reinsurance ceded business shall be included as an offset to Ceded Reinsurance Balances Payable.

76. If the ceding commission paid under a reinsurance agreement exceeds the anticipated acquisition cost of the business ceded, the ceding entity shall establish a liability, equal to the difference between the anticipated acquisition cost and the reinsurance commissions received, to be amortized pro rata over the effective period of the reinsurance agreement in proportion to the amount of coverage provided under the reinsurance contract.

Unauthorized Reinsurance

77. If the assuming reinsurer is not authorized, otherwise approved or certified to do business in the ceding entity's domiciliary state, the assumed reinsurance is considered to be unauthorized. A provision is established to offset credit taken in various balance sheet accounts for reinsurance ceded to unauthorized reinsurers. Credit for reinsurance with unauthorized reinsurers shall be permitted to the extent the ceding entity holds collateral in accordance with Appendix A-785. If the assuming reinsurer is not licensed or is not an authorized reinsurer in the domiciliary state of the ceding entity or if the reinsurance does not meet required standards, the ceding entity must set up a provision for reinsurance liability in accordance with the NAIC Annual Statement Instructions for Property and Casualty Insurance Companies Schedule F.

78. The provision defined in paragraph 77 shall never be less than zero for any particular reinsurer. The change in liability for unauthorized reinsurance is a direct charge or credit to surplus.

Reinsurance Ceded to a Certified Reinsurer

79. The term certified reinsurer shall have the same meaning as set forth in the Appendix A-785.

80. Credit for reinsurance ceded to a certified reinsurer is permitted if security is held by or on behalf of the ceding entity in accordance with the certified reinsurer's rating assigned by the domestic state of the ceding insurance entity, and in accordance with Appendix A-785 of this manual. However, nothing in this guidance would prohibit the parties to a reinsurance agreement from agreeing to provisions establishing security requirements that exceed the minimum security requirements established for certified reinsurers.

81. An upgrade in a certified reinsurer's assigned rating applies on a prospective basis, i.e., the revised collateral requirement applies only to contracts entered into or renewed on or after the effective date of the

new rating (see A-785). A downgrade in a certified reinsurer's rating applies on a retroactive basis, i.e., the revised collateral requirement applies to all reinsurance obligations incurred by the assuming insurer under its certified reinsurer status. Notwithstanding a change in a certified reinsurer's rating or revocation of its certification, a reporting entity that has ceded reinsurance to such certified reinsurer is allowed a three (3)-month grace period before recording a provision for reinsurance due to collateral deficiency associated with such rating downgrade and increased collateral requirement for all reinsurance ceded to such assuming insurer under its certified reinsurer status, unless the reinsurance is found by the commissioner of the reporting entity's domestic state to be at high risk of uncollectibility.

82. A provision is established by the ceding entity to offset credit taken in various balance sheet accounts for reinsurance ceded to a certified reinsurer in an amount proportionate to any deficiency in the amount of acceptable security that is provided by the certified reinsurer as compared to the amount of security that is required to be provided in accordance with the certified reinsurer's rating. The calculation of the provision for a collateral shortfall is separate from the calculation of the provision for overdue reinsurance ceded to certified reinsurers and shall be calculated in accordance with the NAIC Annual Statement Instructions for Property and Casualty Insurance Companies.

83. The provision defined in paragraph 82 shall never be less than zero for any particular certified reinsurer. The change in liability for reinsurance with certified reinsurers is a direct charge or credit to surplus.

Funds Held Under Reinsurance Treaties

84. This liability is established for funds deposited by or contractually withheld from reinsurers or reinsurers.

Provision for Reinsurance

85. The NAIC Property/Casualty Annual Statement Instructions, Schedule F, Part 3 – Ceded Reinsurance, references the provision for overdue reinsurance, which provides for a minimum reserve for uncollectible reinsurance with an additional reserve required if an entity's experience indicates that a higher amount should be provided. The minimum reserve provision for reinsurance is recorded as a liability and the change between years is recorded as a gain or loss directly to unassigned funds (surplus). Any reserve over the minimum amount shall be recorded on the statement of income by reversing the accounts previously utilized to establish the reinsurance recoverable.

86. The provision for reinsurance is calculated separately for unauthorized, authorized and certified reinsurers. An authorized reinsurer is licensed, accredited or approved by the ceding entity's state of domicile; a certified reinsurer is certified by the ceding entity's state of domicile; an unauthorized reinsurer is not so licensed, accredited, approved or certified.

Asbestos and Pollution Contracts – Counterparty Reporting Exception

87. Upon approval by the domiciliary regulator(s) of the ceding entity (either the original direct insurer in the case of a reinsurance agreement or the original assuming reinsurer in the case of a retrocession agreement), an exception may be allowed with respect to a retroactive reinsurance agreement providing substantially duplicate coverage as prior reinsurance agreements on asbestos and/or pollution exposures, including reinsurance provided through an affiliated reinsurer that retrocedes to the retroactive reinsurance counterparty. Under this exception, a reporting entity may aggregate reinsurers into one line item in Schedule F reflecting the counterparty under the retroactive agreement for the purposes of determining the Provision for Reinsurance regarding overdue amounts paid by the retroactive counterparty (both authorized and unauthorized). This exception would allow the Provision for Reinsurance to be reduced by reflecting that amounts have been recovered by the reporting entity under the duplicate coverage provided by the retroactive contract, and that inuring balances from the original contract(s) are payable to the retroactive

counterparty. In addition, such approval would also permit the substitution of the retroactive counterparty for authorized original reinsurers without overdue balances for purposes of reporting on the primary section of the annual statement Schedule F. An agreement must meet all of the requirements in paragraphs 87.a. through 87.e. in order to be considered for this exception.

a. The underlying agreement clearly indicates the credit risk associated with the collection of the reporting entity's inuring reinsurance recoverables and losses related to the credit risk will be covered by the retroactive reinsurance counterparty.

b. The retroactive reinsurance agreement must transfer significant risk of loss.

c. The assuming retroactive reinsurance counterparty must have a financial strength rating from at least two nationally recognized statistical rating organizations (NRSRO), the lowest of which is higher than or equal to the NRSRO ratings of the underlying third-party reinsurers.

d. The transaction is limited to reinsurance recoverables attributable to asbestos, and/or pollution.

e. The recoverables from the inuring reinsurers remain subject to credit analysis and contingent liability analysis.

88. With the approval of the reporting entity's domestic state commissioner pursuant to the applicable state credit for reinsurance law regarding the use of other forms of collateral acceptable to the commissioner, the reporting entity shall present the amount of other approved security related to the retroactive reinsurance agreement as an "Other Allowed Offset Item" with respect to the uncollateralized amounts recoverable from unauthorized reinsurers for paid and unpaid losses and loss adjustment expenses under the original reinsurance contracts. Amounts approved as "Other Allowed Offset Items" shall be reflected as amounts recoverable from the retroactive counterparty and aggregated reporting described in paragraph 87 shall also be applied for unpaid losses and loss adjustment expenses under the original reinsurance contracts. The security applied as an "Other Allowed Offset Item" shall also be reflected in the designated sub-schedule and disclosed as a prescribed or permitted practice. (See Exhibit D of this statement.)

89. The reporting entity will continue to detail the reporting of original reinsurers that were aggregated for one-line reporting per paragraph 87 as provided in the annual statement instructions. The aggregation reporting in schedule F applies only to the extent that inuring balances currently receivable under original reinsurance contracts are also payable to the retroactive reinsurance counterparty, and additionally to reinsurance recoverable on unpaid losses if the domestic state commissioner has approved amounts related to the retroactive reinsurance contract as any other form of security acceptable under the applicable provisions of the state's credit for reinsurance law. This guidance is not intended to otherwise change the application of retroactive accounting guidance for the retroactive portions of the contract that are not duplicative of the original reinsurance. Other than measurement of the provision for reinsurance and presentation in Schedule F, the retroactive contracts should continue to follow guidance applicable to retroactive accounting and reporting.

Syndicated Letters of Credit

90. With a Syndicated Letter of Credit (Syndicated LC), the reinsurer enters into an agreement with a group of banks (the "Issuing Banks") and an agent bank (the "Agent"). Each Issuing Bank and the Agent is an NAIC-approved bank and a "qualified bank". This agreement requires the Agent to issue, on behalf of the each of the Issuing Banks, letters of credit in favor of the ceding insurer. The credit is issued (as an administrative matter) only through the Agent's letter of credit department. Each issuing bank signs the Syndicated LC through the Agent, as its attorney-in-fact. Syndicated LCs are consistent with A-785, in that

the Syndicated LC is the legal equivalent of multiple letters of credit separately issued by each of the issuing banks. Reporting entities shall take a reduction in the liability on account of reinsurance recoverables secured by the Syndicated LC if all of the following conditions are met:

a. All listed banks on the letter of credit are qualified and meet the criteria of the NAIC SVO approved bank listing;

b. Banks are severally and not jointly liable; and

c. Specific percentages for each assuming bank are listed in the letter of credit.

Disputed Items

91. Occasionally a reinsurer will question whether an individual claim is covered under a reinsurance agreement or may even attempt to nullify an entire agreement. A ceding entity, depending upon the individual facts, may or may not choose to continue to take credit for such disputed balances. A ceding entity shall take no credit whatsoever for reinsurance recoverables in dispute with an affiliate.

92. Items in dispute are those claims with respect to which the ceding entity has received formal written communication from the reinsurer denying the validity of coverage.

Uncollectible Reinsurance

93. Uncollectible reinsurance balances shall be written off through the accounts, exhibits, and schedules in which they were originally recorded.

Commutations

94. A commutation of a reinsurance agreement, or any portion thereof, is a transaction which results in the complete and final settlement and discharge of all, or the commuted portion thereof, present and future obligations between the parties arising out of the reinsurance agreement.

95. In commutation agreements, an agreed upon amount determined by the parties is paid by the reinsurer to the ceding entity. The ceding entity immediately eliminates the reinsurance recoverable recorded against the ultimate loss reserve and records the cash received as a negative paid loss. Any net gain or loss shall be reported in underwriting income in the statement of income.

96. The reinsurer eliminates a loss reserve carried at ultimate cost for a cash payout calculated at present value. Any net gain or loss shall be reported in underwriting income in the statement of income.

97. Commuted balances shall be written off through the accounts, exhibits, and schedules in which they were originally recorded.

National Flood Insurance Program

98. The National Flood Insurance Program was created by the Federal Emergency Management Agency (FEMA) and is designed to involve private insurers in a write-your-own (WYO) flood insurance program financially backed by FEMA at no risk to the insurer. To become a participating WYO entity, the entity signs a document with the Federal Insurance Administration (FIA) of the Federal Emergency Management Agency known as the Financial Assistance/Subsidy Arrangement.

99. Premium rates are set by FEMA. The WYO participating companies write the flood insurance coverage qualifying for the program on their own policies, perform their own underwriting, premium

collections, claim payments, administration, and premium tax payments for policies written under the program.

100. Monthly accountings are made to FIA and participants draw upon FEMA letters of credit for deficiencies of losses, loss expenses, and administrative expenses in excess of premiums, subject to certain percentage limitations on expenses.

101. Policies written by the reporting entity under the National Flood Insurance Program are considered insurance policies issued by the reporting entity, with reinsurance ceded to FEMA. (Such policies are not considered uninsured plans under *SSAP No. 47—Uninsured Plans*.) Balances due from or to FEMA shall be reported as ceded reinsurance balances receivable or payable. The commission and fee allowances received from FEMA shall be reported consistent with reinsurance ceding commission.

Accounting for the Transfer of Property and Casualty Run-Off Agreements

102. Property and casualty run-off agreements are reinsurance or retrocession agreements that are intended to transfer essentially all of the risks and benefits of a specific line of business or market segment that is no longer actively marketed by the transferring insurer or reinsurer. A property and casualty run-off agreement is not a novation as the transferring insurer or reinsurer remains primarily liable to the policyholder or ceding entity under the original contracts of insurance or reinsurance. Reinsurance agreements between affiliates or between insurers under common control (as those terms are defined in Appendix A-440) are not eligible for the exception for property and casualty run-off agreements in paragraph 36.e.

Criteria

103. The accounting treatment for property and casualty run-off agreements must be approved by the domiciliary regulators of the transferring entity (either the original direct insurer in the case of a reinsurance agreement or the original assuming reinsurer in the case of a retrocession agreement) and the assuming entity. If the transferring entity and assuming entity are domiciled in the same state, then the regulator of the state where the majority of the transferred liabilities is located shall be asked to approve the accounting treatment. In determining whether to approve an agreement for this accounting treatment, the regulators shall require the following:

a. Assuming Entity Properly Licensed – The entity assuming the run-off agreement must have the appropriate authority or license to write the business being assumed.

b. Limits and Coverages – The reinsurance or retrocession agreement shall provide the same limits and coverages that were afforded in the original insurance or reinsurance agreement.

c. Non-recourse – The reinsurance or retrocession agreement shall not contain any adjustable features or profit share or retrospective rating, and there shall be no recourse (other than normal representations and warranties that would be associated with a purchase and sale agreement) directly or indirectly against the transferring entity.

d. Risk Transfer – The reinsurance or retrocession agreement must meet the requirements of risk transfer as described in this statement.

e. Financial Strength of Reinsurer – The assuming reinsurer shall have a financial strength rating from at least two independent rating agencies (from NAIC credit rating providers (CRP)) which is equal to or greater than the current ratings of the transferring entity. The lowest financial strength rating received from an NAIC acceptable rating organization rating agency will be used to compare the financial strength ratings of the transferring and assuming entities.

f. Assessments – The assuming reinsurer or retrocessionaire (if required in the original reinsurance contract) shall be financially responsible for any and all assessments, including guaranty fund assessments, that are assessed against the transferring entity related to the insurance business being assumed.

g. Applicable Only to "Run-off" Business – The reinsurance or retrocession agreement shall only cover liabilities relating to a line(s) of business or specific market segments no longer actively marketed by the transferring entity.

h. Non-cancelable Reinsurance – The reinsurance or retrocession agreement shall provide that the reinsurance or retrocessional coverage provided by the proposed agreement cannot be cancelable by either party for any reason. (However, this provision will not override standard contracts law and principles and will not prevent any remedies, including rescission or termination that might be available for breach, misrepresentation, etc.)

Statutory Schedules and Exhibits

104. At the inception of the transaction, the transferring entity shall record the consideration paid to the assuming entity as a paid loss. If the consideration paid by the transferring entity is less than the loss reserves transferred, the difference shall be recorded by the ceding entity as a decrease in losses incurred. The assuming entity shall record the consideration received as a negative paid loss. In addition, the transferring entity shall record an increase to ceded reinsurance recoverable for the amount of the transferred reserve. Journal entries illustrating these transactions, including situations in which the transaction includes an unearned premium reserve, are included in Exhibit B of this statement.

105. The assuming entity will report the business in the same line of business as reported by the original insurer or reinsurer. The assuming entity will report the business at the same level of detail using the appropriate statutory schedules and exhibits.

Disclosures

106. Unsecured Reinsurance Recoverables:

a. If the entity has with any individual reinsurers, authorized, reciprocal jurisdiction, unauthorized, or certified an unsecured aggregate recoverable for losses, paid and unpaid including IBNR, loss adjustment expenses, and unearned premium, that exceeds 3% of the entity's policyholder surplus, list each individual reinsurer and the unsecured aggregate recoverable pertaining to that reinsurer; and

b. If the individual reinsurer is part of a group, list the individual reinsurers, each of its related group members having reinsurance with the reporting entity, and the total unsecured aggregate recoverables for the entire group.

107. Reinsurance Recoverables in Dispute—Reinsurance recoverable on paid and unpaid (including IBNR) losses in dispute by reason of notification, arbitration or litigation shall be identified if the amounts in dispute from any entity (and/or affiliate) exceed 5% of the ceding entity's policyholders surplus or if the aggregate of all disputed items exceeds 10% of the ceding entity's policyholders surplus. Notification means a formal written communication from a reinsurer denying the validity of coverage.

108. Uncollectible Reinsurance—Describe uncollectible reinsurance written off during the year reported in the following annual statement classifications, including the name(s) of the reinsurer(s):

a. Losses incurred;

b. Loss adjustment expenses incurred;

c. Premiums earned; and

d. Other.

109. Commutation of Ceded Reinsurance—Describe commutation of ceded reinsurance during the year reported in the following annual statement classifications, including the name(s) of the reinsurer(s):

a. Losses incurred;

b. Loss adjustment expenses incurred;

c. Premiums earned; and

d. Other.

110. Retroactive Reinsurance—The table illustrated in the NAIC Annual Statement Instructions for Property and Casualty Companies under Retroactive Reinsurance in the Notes to Financial Statements section shall be completed for all retroactive reinsurance agreements that transfer liabilities for losses that have already occurred and that will generate special surplus transactions. The insurer (assuming or ceding) shall assign a unique number to each retroactive reinsurance agreement and shall utilize this number for as long as the agreement exists. Transactions utilizing deposit accounting shall not be reported in this note.

111. Reinsurance Assumed and Ceded—The tables illustrated in the NAIC Annual Statement Instructions for Property and Casualty Companies under "Reinsurance Assumed and Ceded in the Notes to Financial Statements" section shall be completed as follows:

a. The financial statements shall disclose the maximum amount of return commission which would have been due reinsurers if all reinsurance were canceled with the return of the unearned premium reserve; and

b. The financial statements shall disclose the accrual of additional or return commission, predicated on loss experience or on any other form of profit sharing arrangements as a result of existing contractual arrangements.

112. A specific interrogatory requires information on reinsurance of risk accompanied by an agreement to release the reinsurer from liability, in whole or in part, from any loss that may occur on the risk or portion thereof.

113. Disclosures for paragraphs 114-119 represent annual statement interrogatories, which are required to be included with the annual audit report beginning with audit reports on financial statements as of and for the period ended December 31, 2006. The disclosures required within paragraphs 114-119 shall be included in accompanying supplemental schedules of the annual audit report beginning in year-end 2006. These disclosures shall be limited to reinsurance contracts entered into, renewed or amended on or after January 1, 1994. This limitation applies to the annual audit report only and does not apply to the statutory annual statement interrogatories and the reinsurance summary supplemental filing.

114. Disclose if any risks are reinsured under a quota share reinsurance contract with any other entity that includes a provision that would limit the reinsurer's losses below the stated quota share percentage (e.g. a deductible, a loss ratio corridor, a loss cap, an aggregate limit or any similar provisions)? If yes, indicate the number of reinsurance contracts containing such provisions and if the amount of reinsurance credit taken reflects the reduction in quota share coverage caused by any applicable limiting provision(s).

115. Disclose if the reporting entity ceded any risk under any reinsurance contract (or under multiple contracts with the same reinsurer or its affiliates) for which during the period covered by the statement: (i) it recorded a positive or negative underwriting result greater than 5% of prior year-end surplus as regards policyholders or it reported calendar year written premium ceded or year-end loss and loss expense reserves ceded greater than 5% of prior year-end surplus as regards policyholders; (ii) it accounted for that contract as reinsurance and not as a deposit; and (iii) the contract(s) contain one or more of the following features or other features that would have similar results:

a. A contract term longer than two years and the contract is noncancellable by the reporting entity during the contract term;

b. A limited or conditional cancellation provision under which cancellation triggers an obligation by the reporting entity, or an affiliate of the reporting entity, to enter into a new reinsurance contract with the reinsurer, or an affiliate of the reinsurer;

c. Aggregate stop loss reinsurance coverage;

d. A unilateral right by either party (or both parties) to commute the reinsurance contract, whether conditional or not, except for such provisions which are only triggered by a decline in the credit status of the other party;

e. A provision permitting reporting of losses, or payment of losses, less frequently than on a quarterly basis (unless there is no activity during the period); or

f. Payment schedule, accumulating retentions from multiple years or any features inherently designed to delay timing of the reimbursement to the ceding entity.

116. Disclose if the reporting entity during the period covered by the statement ceded any risk under any reinsurance contract (or under multiple contracts with the same reinsurer or its affiliates) for which it recorded a positive or negative underwriting result greater than 5% of prior year-end surplus as regards policyholders or it reported calendar year written premium ceded or year-end loss and loss expense reserves ceded greater than 5% of prior year-end surplus as regards policyholders. This disclosure is limited to reinsurance contracts with written premium cessions or loss and loss expense reserve cessions described in this paragraph that meet the criteria of paragraph 116.a. or paragraph 116.b. This disclosure excludes cessions to approved pooling arrangements or to captive insurance companies that are directly or indirectly controlling, controlled by, or under common control with (i) one or more unaffiliated policyholders of the reporting entity, or (ii) an association of which one or more unaffiliated policyholders of the reporting entity is a member.

a. The written premium ceded to the reinsurer by the reporting entity or its affiliates represents fifty percent (50%) or more of the entire direct and assumed premium written by the reinsurer based on its most recently available financial statement; or

b. Twenty–five percent (25%) or more of the written premium ceded to the reinsurer has been retroceded back to the reporting entity or its affiliates in separate reinsurance contract.

117. If affirmative disclosure is required for paragraph 115 or 116, provide the following information:

a. A summary of the reinsurance contract terms and indicate whether it applies to the contracts meeting paragraph 115 or 116;

b. A brief discussion of management's principal objectives in entering into the reinsurance contract including the economic purpose to be achieved; and

c. The aggregate financial statement impact gross of all such ceded reinsurance contracts on the balance sheet and statement of income.

118. Except for transactions meeting the requirements of paragraph 36, disclose if the reporting entity ceded any risk under any reinsurance contract (or multiple contracts with the same reinsurer or its affiliates) during the period covered by the financial statement, and either:

a. Accounted for that contract as reinsurance (either prospective or retroactive) under statutory accounting principles (SAP) and as a deposit under generally accepted accounting principles (GAAP); or

b. Accounted for that contract as reinsurance under GAAP and as a deposit under SAP.

119. If affirmative disclosure is required for paragraph 118, explain in a supplemental filing why the contract(s) is treated differently for GAAP and SAP.

120. Disclosures for the Transfer of Property and Casualty Run-off Agreements

a. Disclose if the reporting entity has entered into any agreements which have been approved by their domiciliary regulator and have qualified pursuant to paragraph 36.e. (also see paragraphs 102-105).

b. If affirmative, provide a description of the agreement and the amount of consideration paid and liabilities transferred.

121. The financial statements shall disclose the following with respect to reinsurance agreements which qualify for reinsurer aggregation in accordance with paragraphs 87-89:

a. A description of the significant terms of the reinsurance agreement, including established limits and collateral, and

b. The amount of unexhausted limit as of the reporting date.

c. To the extent that the domestic state insurance department approves the use of the retroactive contract as an acceptable form of security related to the original reinsurers under the applicable provisions of the state's credit for reinsurance law, the use of such discretion shall be disclosed in the annual statement Note 1 as a prescribed or permitted practice. In addition, Note 1 shall disclose as part of the total impact on the provision for reinsurance the impact on the overdue aspects of the calculation if the reporting entity also receives commissioner approval pursuant to paragraph 87 related to overdue paid amounts (both authorized and unauthorized).

122. The financial statements shall disclose the following with respect to reinsurance agreements that have been accounted for as deposits:

a. A description of the reinsurance agreements.

b. Any adjustment of the amounts initially recognized for expected recoveries. The individual components of the adjustment (e.g., interest accrual, change due to a change in estimated or actual cash flow) shall be disclosed separately.

123. The financial statements shall disclose the impact on any reporting period in which a certified reinsurer's rating has been downgraded or its certified reinsurer status is subject to revocation and additional collateral has not been received as of the filing date. The disclosure should include the following:

a. Name of certified reinsurer downgraded or subject to revocation of certified reinsurer status and relationship to the reporting entity;

b. Date of downgrade or revocation and jurisdiction of action;

c. Collateral percentage requirements pre and post downgrade or revocation;

d. Net ceded recoverable subject to collateral;

e. As of the end of the current quarter, the estimated impact of the collateral deficiency to the reporting entity as a result of the assuming entity's downgrade or revocation of certified reinsurer status. (At year-end the actual impact of the collateral deficiency on the provision for reinsurance shall be disclosed.)

124. U.S. domiciled reinsurers are eligible for certified reinsurer status. If the reporting entity is a certified reinsurer, the financial statements shall disclose the impact on any reporting period in which its certified reinsurer rating is downgraded or status as a certified reinsurer is subject to revocation. Such disclosure shall include information similar to paragraphs 123.b., 123.c. and 123.d. and the expectation of its certified reinsurer's ability to meet the increased requirements.

125. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

126. This statement adopts with modification *FASB Statement No. 113, Accounting and Reporting for Reinsurance of Short-Duration and Long-Duration Contracts* (FAS 113) and FASB *Emerging Issues Task Force No. 93-6, Accounting for Multiple-Year Retrospectively Rated Contracts by Ceding and Assuming Enterprises* for the following:

a. Reinsurance recoverables on unpaid case-basis and incurred but not reported losses and loss adjustment expenses shall be reported as a contra-liability netted against the liability for gross losses and loss adjustment expenses;

b. Amounts paid for prospective reinsurance that meet the conditions for reinsurance accounting shall be reported as a reduction of unearned premiums;

c. The gain created by a retroactive reinsurance agreement because the amount paid to the reinsurer is less than the gross liabilities for losses and loss adjustment expenses ceded to the reinsurer is reported in the statement of income as a write-in gain in other income by the ceding entity and a write-in loss by the assuming entity. The gain created by a retroactive reinsurance agreement is restricted as a special surplus account until the actual retroactive reinsurance recovered is in excess of the consideration paid;

d. This statement requires that a liability (provision for reinsurance) be established through a provision reducing unassigned funds (surplus) for unsecured reinsurance recoverables from unauthorized or certified reinsurers and for certain overdue balances due from authorized reinsurers;

e. Some reinsurance agreements contain adjustable features that provide for adjustment of commission, premium or amount of coverage, based on loss experience. This statement requires that the asset or liability arising from the adjustable feature be computed based on experience to date under the agreement, and the impact of early termination may only be considered at the time the agreement has actually been terminated;

f. Structured settlements are addressed in *SSAP No. 65—Property and Casualty Contracts*. Statutory accounting and FAS 113 are consistent in accounting for structured settlement annuities where the reporting entity is the owner and payee and where the claimant is the payee and the reporting entity has been released from its obligation. FAS 113 distinguishes structured settlement annuities where the claimant is the payee and a legally enforceable release from the reporting entity's liability is obtained from those where the claimant is the payee but the reporting entity has not been released from its obligation. GAAP requires the deferral of any gain resulting from the purchase of a structured settlement annuity where the reporting entity has not been released from its obligation; and

g. This statement requires that reinsurance recoverables on unpaid losses and loss adjustment expenses be presented as a contra-liability. Requirements for offsetting and netting are addressed in SSAP No. 64.

127. This statement adopts American Institute of Certified Public Accountants (AICPA) *Statement of Position 98-7, Deposit Accounting: Accounting for Insurance and Reinsurance Contracts That Do Not Transfer Insurance Risk* (SOP 98-7) paragraphs 10-12 and 19 (subsection b only). This statement rejects AICPA SOP 98-7 paragraphs 13-17 and 19 (subsections a and c).

128. This statement rejects AICPA *Statement of Position No. 92-5, Accounting for Foreign Property and Liability Reinsurance*. This statement incorporates Appendix A-785 as applicable.

Effective Date and Transition

129. This statement shall apply to:

a. Reinsurance agreements entered into, renewed, or amended on or after January 1, 1994. An amendment is any revision or adjustment of contractual terms. The payment of premiums or reimbursement of losses recoverable under the agreement shall not constitute an amendment; and

b. Reinsurance agreements in force on January 1, 1995, which cover losses occurring or claims made on or after that date on policies reinsured under such agreements.

130. The guidance shall not apply to:

a. Reinsurance agreements which cover only losses occurring or claims made before January 1, 1994, and which were entered into before January 1, 1994, and were not subsequently renewed or amended; and

b. Reinsurance agreements that expired before and were not renewed or amended after January 1, 1995.

131. The guidance in paragraphs 55-74 shall be effective for all accounting periods beginning on or after January 1, 1996, and shall apply to reinsurance agreements entered into, renewed or amended on or after January 1, 1994.

132. This statement, including the guidance in paragraph 40 incorporated from SSAP No. 75, is effective for years beginning January 1, 2001. Changes resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors.*

a. Revisions to paragraph 36.e., related to paragraphs 102-105, and disclosures in paragraph 120 documented in *Issue Paper No. 137—Transfer of Property and Casualty Reinsurance Run-off Agreements* are effective for contracts entered on or after January 1, 2010.

b. The guidance in paragraphs 40, 122 and 127 was previously included within *SSAP No. 75—Reinsurance Deposit Accounting—An Amendment to SSAP No. 62R, Property and Casualty Reinsurance* and was also effective for years beginning January. 1, 2001. In 2011, the guidance from SSAP No. 75 was incorporated within this statement, with SSAP No. 75 nullified. The original guidance included in this statement for deposit accounting, as well as the original guidance adopted in SSAP No. 75, are retained for historical purposes in Issue Paper No. 104. The guidance in paragraph 54 was originally contained within *INT 02-06: Indemnification in Modeled Trigger Transactions* and was effective June 9, 2002. The guidance in paragraph 90 was originally contained within *INT 02-09: A-785 and Syndicated Letters of Credit* and was effective September 12, 2004.

c. The guidance related to certified reinsurers is applicable only to cedents domiciled in states that have enacted/promulgated the new collateral framework and only for their cessions to reinsurers certified under that domestic law/rule. The requirements applicable to contracts with certified reinsurers shall be effective for all reporting periods beginning on or after December 31, 2012.

133. The guidance in paragraphs 87-89 and 121 which allowed retroactive reinsurance exceptions for asbestos and pollution contracts was effective for all accounting periods beginning on or after January 1, 2014, for paid losses. This guidance was revised to also allow for unpaid losses effective for reporting periods ending on and after December 31, 2015.

134. The substantive revisions adopted November 15, 2018, which primarily incorporated guidance originally from *EITF 93-6, Accounting for Multiple-Year Retrospectively-Rated Contracts by Ceding and Assuming Enterprises,* and from *EITF Topic D-35, FASB Staff Views on Issue No. 93-6, Accounting for Multiple-Year Retrospectively Rated Contracts by Ceding and Assuming Enterprises,* are effective for contracts in effect on or after January 1, 2019. These revisions are required for contracts in effect as EITF 93-6 had been adopted with modification in this statement from its original 2001 effective date. The revisions adopted in November 2018 primarily added clarification and implementation guidance. (Companies that have previously been following the original intent, as clarified in the revisions, should not be impacted by the November 2018 revisions.) However, if a reporting entity becomes aware that the prior application of reinsurance credit guidance was not consistent with the adopted guidance, the updates should be applied as a change in accounting principle to contracts in effect as of January 1, 2019.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 75—Property and Casualty Reinsurance*
- *Issue Paper No. 104—Reinsurance Deposit Accounting – An Amendment to SSAP No. 62R—Property and Casualty Reinsurance*
- *Issue Paper No. 137—Transfer of Property and Casualty Reinsurance Run-off Agreements*
- *Issue Paper No. 153—Counterparty Reporting Exception for Asbestos and Pollution Contracts*

CLASSIFYING REINSURANCE CONTRACTS

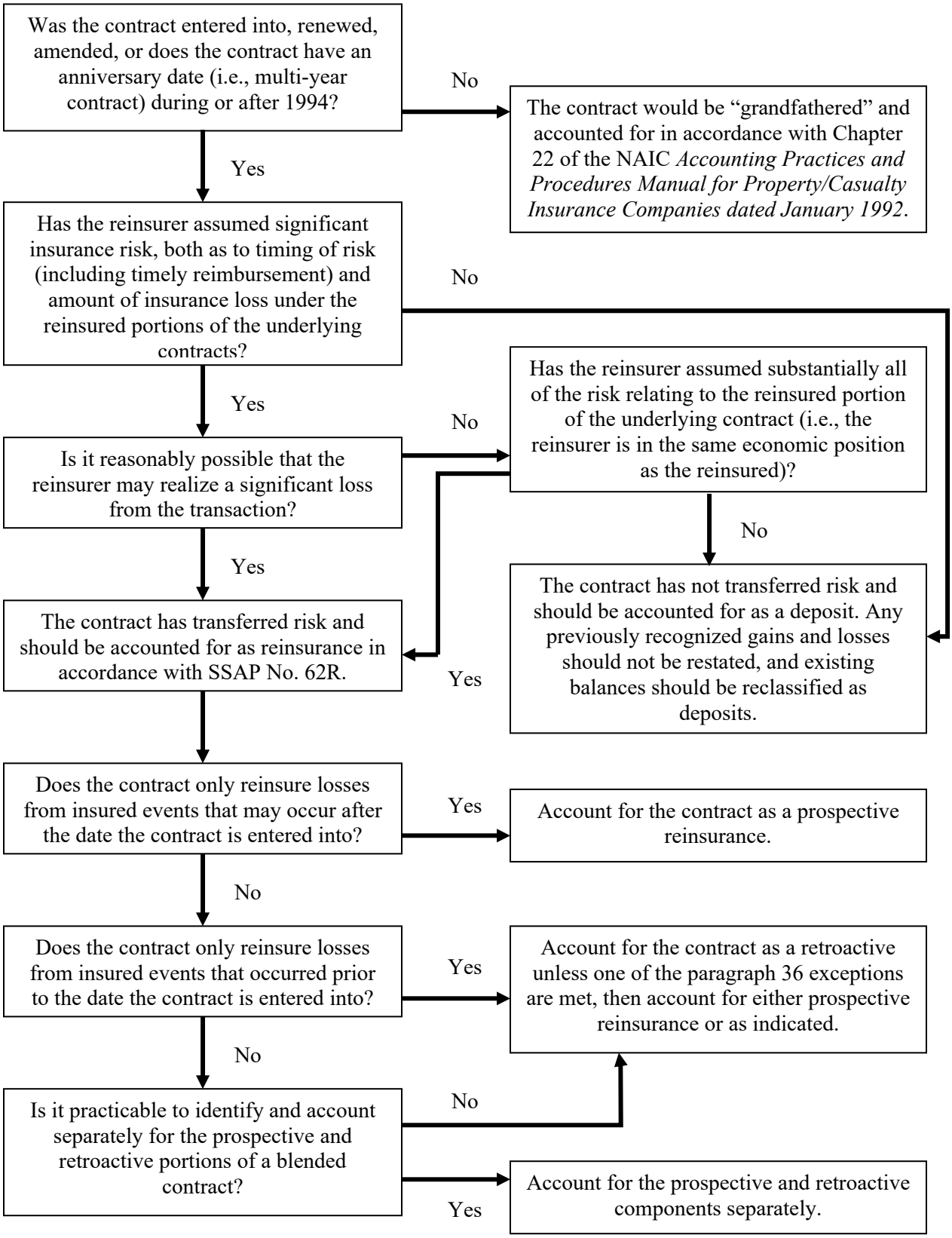


EXHIBIT A – IMPLEMENTATION QUESTIONS AND ANSWERS

This exhibit addresses common questions regarding implementation of the property and casualty reinsurance accounting standards.

Index to Questions

No.	Question
Applicability	
1	The accounting practices in SSAP No. 62R specify the accounting and reporting for reinsurance contracts. What contracts are considered reinsurance contracts for purposes of applying these accounting practices?
2	The provisions of this statement will apply to (a) reinsurance contracts entered into, renewed or amended on or after January 1, 1994, and (b) any other reinsurance contracts that are in force on January 1, 1995, and cover insurable events on the underlying insurance policies that occur on or after that date. What contracts would be exempt from the accounting rules included in SSAP No. 62R?
3	This statement is to be applied to contracts which are amended on or after January 1, 1994. What if the change in terms is not significant, or the terms changed have no financial effect on the contract?
4	Must the accounting provisions of SSAP No. 62R be applied to an *otherwise exempt* contract if the ceding entity pays additional premiums under the contract on or after January 1, 1994?
5	Prospective and retroactive portions of a reinsurance contract are allowed to be accounted for separately, if practicable. Can the retroactive portion of an existing contract be segregated and, therefore, exempted with other retroactive contracts covering insured events occurring prior to January 1, 1994?
Risk Transfer	
6	Do the risk transfer provisions apply to existing contracts?
7	How does the effective date affect the assessment of whether a significant loss to the reinsurer was reasonably possible?
8	Should risk transfer be reassessed if contractual terms are subsequently amended?
9	How should the risk transfer assessment be made when a contract has been amended?
10	For purposes of evaluating whether a contract with a reinsurer transfers risk, what constitutes a contract?
11	If the assessment of risk transfer changes after the initial assessment at contract inception, how should the ceding entity account for the change?
12	SSAP No. 62R requires that reasonably possible outcomes be evaluated to determine the reinsurer's exposure to significant loss. What factors should be considered in determining whether a scenario being evaluated is reasonably possible?

No.	Question
13	In determining the amount of the reinsurer's loss under reasonably possible outcomes, may cash flows directly related to the contract other than those between the ceding and assuming companies, such as taxes and operating expenses of the reinsurer, be considered in the calculation?
14	In evaluating the significance of a reasonably possible loss, should the reasonably possible loss be compared to gross or net premiums?
15	How does a commutation clause affect the period of time over which cash flows are evaluated for reasonable possibility of significant loss to the reinsurer?
16	SSAP No. 62R refers to payment schedules and accumulating retentions from multiple years as features that delay timely reimbursement of claims. Does the presence of those features generally prevent a contract from meeting the conditions for reinsurance accounting?
17	What if a contract contains a feature such as a payment schedule or accumulating retention but could still result in the reasonable possibility of significant loss to the reinsurer?
18	Can a reinsurance agreement compensate a reinsurer for losses?
19	In determining whether a reinsurance contract qualifies under the exception referred to in paragraph 18 of SSAP No. 62R, how should the economic position of the reinsurer be assessed in relation to that of the ceding entity?
Accounting Provisions	
20	An existing contract that was accounted for as reinsurance no longer qualifies for reinsurance accounting under the accounting rules included in SSAP No. 62R. How should the ceding and assuming companies account for the contract in future periods?
21	What is the definition of past insurable events that governs whether reinsurance coverage is prospective or retroactive? For example, could a reinsurance contract that covers losses from asbestos and pollution claims on occurrence-based insurance policies effective during previous periods be considered prospective if the reinsurance coverage is triggered by a court interpretation that a loss is covered within the terms of the underlying insurance policies?
22	Would the answer to the above question change if the reinsurance were written on a claims-made basis?
23	What is the effect of adjustments to future premiums or coverage in determining whether reinsurance is prospective or retroactive?
24	A reinsurance contract is entered into after the contract's effective date. Is the coverage between the contract's effective date and the date the contract was entered into prospective or retroactive?
25	How is the date the reinsurance contract was entered into determined?
26	Are contracts to reinsure calendar-year incurred losses considered blended contracts that have both prospective and retroactive elements?
27	When the prospective and retroactive portions of a contract are being accounted for separately, how should premiums be allocated to each portion of the contract?

No.	Question
28	A retroactive reinsurance contract contains a cut-through provision that provides the ceding entity's policyholders and claimants with the right to recover their claims directly from the reinsurer. May the ceding entity immediately recognize earned surplus associated with this type of contract?
29	A ceding entity enters into a retroactive reinsurance agreement that gives rise to segregated surplus. If the reinsurer prepays its obligation under the contract, may the ceding entity recognize earned surplus at the time the prepayment is received?
30	If the ceding entity does not expect to receive any recoveries because the reinsurer has agreed to reimburse claimants under the reinsured contracts directly, would the ceding entity be considered to have recovered or terminated its transferred liabilities?
31	What accounting entries would a ceding entity make to report a retroactive reinsurance contract?
32	How should the parties account for an adverse loss development reinsurance contract where, as of the statement date, the attachment level of the contract exceeds the ceding company's current case and IBNR reserves for the covered accident years (i.e., no surplus gain and no reinsurance recoverable as of the statement date), and the ceding company transferred cash to the reinsurer at the inception of the contract?
33	How should a ceding company account for payment of the premium for a retroactive reinsurance contract by the ceding company's parent company or some other person not a party to the reinsurance contract (for example, adverse loss development reinsurance contracts purchased by the parent company in the context of the purchase or sale of the ceding company)?

Applicability

1. Q: The accounting practices in SSAP No. 62R specify the accounting and reporting for reinsurance contracts. What contracts are considered reinsurance contracts for purposes of applying these accounting practices?

   A: Any transaction that indemnifies an insurer against loss or liability relating to insurance risk shall be accounted for in accordance with the accounting practices included in SSAP No. 62R. Therefore, all contracts, including contracts that may not be structured or described as reinsurance, shall be accounted for as reinsurance when those conditions are met.

2. Q: The provisions of this statement will apply to (a) reinsurance contracts entered into, renewed or amended on or after January 1, 1994, and (b) any other reinsurance contracts that are in force on January 1, 1995 and cover insurable events on the underlying insurance policies that occur on or after that date. What contracts would be exempt from the accounting rules included in SSAP No. 62R?

   A: The only exempt contracts are:

      1) Purely retroactive reinsurance contracts that cover only insured events occurring before January 1, 1994, provided those contracts were entered into before that date and are not subsequently amended and

      2) Contracts that expired before January 1, 1995 and are not amended after that date.

3. Q: This statement is to be applied to contracts which are amended on or after January 1, 1994. What if the change in terms is not significant, or the terms changed have no financial effect on the contract?

   A: In general, the term amendment should be viewed broadly to include all but the most trivial changes. Examples of amendments include, but are not limited to, replacing one assuming entity with another (including an affiliated entity), or modifying the contract's limit, coverage, premiums, commissions, or experience-related adjustable features. No distinction is made between financial and non-financial terms.

4. Q: Must the accounting provisions of SSAP No. 62R be applied to an *otherwise exempt* contract if the ceding entity pays additional premiums under the contract on or after January 1, 1994?

   A: The answer depends on why the additional premiums are paid. If the additional premiums are the result of a renegotiation, adjustment, or extension of terms, the contract is subject to the accounting provisions of SSAP No. 62R. However, additional premiums paid without renegotiation, adjustment, or extension of terms would not make an otherwise exempt contract subject to those provisions.

5. Q: Prospective and retroactive portions of a reinsurance contract are allowed to be accounted for separately, if practicable. Can the retroactive portion of an existing contract be segregated and, therefore, exempted with other retroactive contracts covering insured events occurring prior to January 1, 1994?

   A: No. The transition provisions apply to an entire contract, which is either subject to or exempt from the provisions of SSAP No. 62R. A ceding entity may bifurcate a contract already subject to the accounting rules in SSAP No. 62R and then account for both the prospective and retroactive portions in accordance with the accounting standard.

Risk Transfer

6. Q: Do the risk transfer provisions apply to existing contracts?

   A: Yes, the risk transfer provisions apply to some existing contracts. SSAP No. 62R applies in its entirety only to existing contracts which were renewed or amended on or after January 1, 1994, or which cover losses occurring or claims made after that date. Therefore, those contracts must be evaluated to determine whether they transfer risk and qualify for reinsurance accounting. For accounting periods commencing on or after January 1, 1995, balances relating to such contracts which do not transfer insurance risk shall be reclassified as deposits and shall be accounted for and reported in the manner described under the caption Reinsurance Contracts Must Include Transfer of Risk.

   SSAP No. 62R does not apply to existing contracts which were entered into before, and were not renewed or amended on or after, January 1, 1994, and which cover only losses occurring or claims made before that date, nor to contracts which expired before, and were not renewed or amended on or after, January 1, 1995. Those contracts will continue to be accounted for in the manner provided by SSAP No. 62R before these revisions.

7. Q: How does the effective date affect the assessment of whether a significant loss to the reinsurer was reasonably possible?

   A: The risk transfer assessment is made at contract inception, based on facts and circumstances known at the time. Because that point in time has passed for existing contracts, some have suggested that the risk transfer provisions be applied as of the effective date. However, that approach to the risk transfer assessment would violate the requirement to consider all cash flows from the contract.

Therefore, the test must be applied from contract inception, considering the effect of any subsequent contract amendments. Careful evaluation and considered judgment will be required to determine whether a significant loss to the reinsurer was reasonably possible at inception.

8. Q: Should risk transfer be reassessed if contractual terms are subsequently amended?

   A: Yes. When contractual terms are amended, risk transfer should be reassessed. For example, a contract that upon inception met the conditions for reinsurance accounting could later be amended so that it no longer meets those conditions. The contract should then be reclassified and accounted for as a deposit.

9. Q: How should the risk transfer assessment be made when a contract has been amended?

   A: No particular method is prescribed for assessing risk transfer in light of a contract amendment. Whether an amended contract in substance transfers risk must be determined considering all of the facts and circumstances in light of the risk transfer requirements. Judgment also will be required to determine whether an amendment in effect creates a new contract.

10. Q: For purposes of evaluating whether a contract with a reinsurer transfers risk, what constitutes a contract?

    A: A contract is not defined, but is essentially a question of substance. It may be difficult in some circumstances to determine the boundaries of a contract. For example, the profit-sharing provisions of one contract may refer to experience on other contracts and, therefore, raise the question of whether, in substance, one contract rather than several contracts exist.

    The inconsistency that could result from varying interpretations of the term *contract* is limited by requiring that features of the contract or other contracts or agreements that directly or indirectly compensate the reinsurer or related reinsurers for losses be considered in evaluating whether a particular contract transfers risk. Therefore, if agreements with the reinsurer or related reinsurers, in the aggregate, do not transfer risk, the individual contracts that make up those agreements also would not be considered to transfer risk, regardless of how they are structured.

11. Q: If the assessment of risk transfer changes after the initial assessment at contract inception, how should the ceding entity account for the change?

    A: The status of a contract should be determinable at inception and, absent amendment, subsequent changes should be very rare. If the risk of significant loss was not deemed reasonably possible at inception, and a significant loss subsequently occurred, the initial assessment was not necessarily wrong, because remote events do occur. Likewise, once a reasonable possibility of significant loss has been established, such loss need not occur in order to maintain the contract's status as reinsurance.

12. Q: SSAP No. 62R requires that reasonably possible outcomes be evaluated to determine the reinsurer's exposure to significant loss. What factors should be considered in determining whether a scenario being evaluated is reasonably possible?

    A: The term *reasonably possible* means that the probability is more than remote. The test is applied to a particular scenario, not to the individual assumptions used in the scenario. Therefore, a scenario is not reasonably possible unless the likelihood of the entire set of assumptions used in the scenario occurring together is reasonably possible.

13. Q: In determining the amount of the reinsurer's loss under reasonably possible outcomes, may cash flows directly related to the contract other than those between the ceding and assuming companies, such as taxes and operating expenses of the reinsurer, be considered in the calculation?

A: No. The evaluation is based on the present value of all cash flows *between the ceding and assuming enterprises* under reasonably possible outcomes and, therefore, precludes considering other expenses of the reinsurer in the calculation.

14. Q: In evaluating the significance of a reasonably possible loss, should the reasonably possible loss be compared to gross or net premiums?

A: Gross premiums should be used.

15. Q: How does a commutation clause affect the period of time over which cash flows are evaluated for reasonable possibility of significant loss to the reinsurer?

A: All cash flows are to be assessed under reasonably possible outcomes. Therefore, unless commutation is expected in the scenario being evaluated, it should not be assumed in the calculation. Further, the assumptions used in a scenario must be internally consistent and economically rational in order for that scenario's outcome to be considered reasonably possible.

16. Q: SSAP No. 62R refers to payment schedules and accumulating retentions from multiple years as features that delay timely reimbursement of claims. Does the presence of those features generally prevent a contract from meeting the conditions for reinsurance accounting?

A: Yes. Payment schedules and accumulating retentions from multiple years are contractual features inherently designed to delay the timing of reimbursement to the ceding entity. Regardless of what a particular feature might be called, any feature that can delay timely reimbursement violates the conditions for reinsurance accounting. Transfer of insurance risk requires that the reinsurer's payments to the ceding entity depend on and directly vary with the amount and timing of claims settled under the reinsured contracts. Contractual features that can delay timely reimbursement prevent this condition from being met. Therefore, any feature that may affect the timing of the reinsurer's reimbursement to the ceding entity should be closely scrutinized.

17. Q: What if a contract contains a feature such as a payment schedule or accumulating retention but could still result in the reasonable possibility of significant loss to the reinsurer?

A: Both of the following conditions are required for reinsurance accounting:

a. Transfer of significant risk arising from uncertainties about both (i) the ultimate amount of net cash flows from premiums, commission, claims, and claim settlement expenses paid under a contract (underwriting risk) and (ii) the timing of the receipt and payment of those cash flows (timing risk); and

b. Reasonable possibility of significant loss to the reinsurer.

Because both condition (a) and condition (b) must be met, failure to transfer significant timing and underwriting risk is not overcome by the possibility of significant loss to the reinsurer.

18. Q: Can a reinsurance agreement compensate a reinsurer for losses?

A: A contract does not meet the conditions for reinsurance accounting if features of the reinsurance contract or other contracts or agreements directly or indirectly compensate the reinsurer or related reinsurers for losses to an extent that risk-transfer criteria is violated. That compensation may take many forms, and an understanding of the substance of the contracts or agreements is required to determine whether the ceding entity has been indemnified against loss or liability relating to insurance risk. For example, contractual features may limit the reinsurer's exposure to insurance risk or delay the reimbursement of claims so that investment income mitigates exposure to insurance risk. Examples of those contractual features noted in paragraph 12 are not all-inclusive.

19. Q: In determining whether a reinsurance contract qualifies under the exception referred to in paragraph 18, how should the economic position of the reinsurer be assessed in relation to that of the ceding entity?

A: The assessment should be made by comparing the net cash flows of the reinsurer under the reinsurance contract with the net cash flows of ceding entity on the reinsured portions of the underlying insurance contracts. This may be relatively easy for reinsurance of individual risks or for unlimited-risk quota-share reinsurance, because the premiums and losses on these types of reinsurance generally are the same as the premiums and losses on the reinsured portions of the underlying insurance policies.

In other types of reinsurance, determining the reinsurer's net cash flows relative to the insurer is likely to be substantially more difficult. For example, it generally would be difficult to demonstrate that the ceding entity's premiums and losses for a particular layer of insurance are the same as the reinsurer's premiums and losses related to that layer. If the economic position of the reinsurer relative to the insurer cannot be determined, the contract would not qualify under the exception.

Accounting Provisions

20. Q: An existing contract that was accounted for as reinsurance no longer qualifies for reinsurance accounting under the accounting rules included in SSAP No. 62R. How should the ceding and assuming companies account for the contract in future periods?

A: Because the statement of income cannot be restated, previously recognized gains and losses are not revised. If the contract was entered into before, and not renewed or amended on or after, January 1, 1994 and covers only losses occurring or claims made before that date, or the contract expired before January 1, 1995 and was not renewed or amended on or after that date, it would continue to be accounted for in the manner provided before these revisions.

For accounting periods commencing on or after January 1, 1995, existing balances relating to contracts which do not transfer insurance risk and which were entered into on or after January 1, 1994 (covering losses occurring or claims made after that date) would be reclassified as deposits.

Premium payments to a reinsurer would be recorded as deposits. Likewise, losses recoverable from a reinsurer would not be recognized as receivables. Rather, any reimbursement for losses would be accounted for upon receipt as a refund of a deposit.

21. Q: What is the definition of past insurable events that governs whether reinsurance coverage is prospective or retroactive? For example, could a reinsurance contract that covers losses from asbestos and pollution claims on occurrence-based insurance policies effective during previous periods be considered prospective if the reinsurance coverage is triggered by a court interpretation that a loss is covered within the terms of the underlying insurance policies?

A: The distinction between prospective and retroactive reinsurance is based on whether a contract reinsures future or past insured events covered by the underlying reinsurance contracts. In the example above, the insured event is the occurrence of loss within the coverage of the underlying insurance contracts, not the finding of a court. Therefore, the fact that the asbestos exposure or pollution is covered under insurance policies effective during prior periods makes the reinsurance coverage in this example retroactive.

22. Q: Would the answer to the above question change if the reinsurance were written on a claims-made basis?

A: No. The form of the reinsurance—whether claims-made or occurrence-based—does not determine whether the reinsurance is prospective or retroactive. A claims-made reinsurance contract that reinsures claims asserted to the reinsurer in a future period as a result of insured events that occurred prior to entering into the reinsurance contract is a retroactive contract.

23. Q: What is the effect of adjustments to future premiums or coverage in determining whether reinsurance is prospective or retroactive?

A: Adjustments to future premiums or coverage may affect the accounting for a reinsurance contract. Whenever an adjustment results in a reinsurer providing new or additional coverage for past insurable events, that coverage is retroactive. For example, if subsequent years' premiums under a multiple accident year contract create additional coverage for previous accident years, the additional coverage is retroactive, even if the original coverage provided in the contract for those accident years was prospective. Likewise, if current losses under a multiple-year contract eliminate coverage in future periods, some or all of the premiums to be paid in those future periods should be charged to the current period.

24. Q: A reinsurance contract is entered into after the contract's effective date. Is the coverage between the contract's effective date and the date the contract was entered into prospective or retroactive?

A: The portion of the contract related to the period of time between the effective date of the contract and the date the contract was entered into is retroactive because it covers insured events that occurred prior to entering into the reinsurance contract.

25. Q: How is the date the reinsurance contract was entered into determined?

A: It is not uncommon for a reinsurance arrangement to be initiated before the beginning of a policy period but not finalized until after the policy period begins. Whether there was agreement in principle at the beginning of the policy period and, therefore, the contract is substantively prospective must be determined based on the facts and circumstances. For example, a contract may be considered to have been substantively entered into even though regulatory approval of that contract has not taken place.

The absence of agreement on significant terms, or the intention to establish or amend those terms at a later date based on experience or other factors, generally indicates that the parties to the contract have not entered into a reinsurance contact, but rather have agreed to enter into a reinsurance contract at a future date. If contractual provisions under a contract substantively entered into at a future date covered insurable events prior to that date, that coverage is retroactive.

In any event, SSAP No. 62R provides that if a contract (except facultative contracts and contracts signed by the lead reinsurer and certain cover notes or similar documents signed by reinsurers representing more than 50% of the capacity on the contract) has not been finalized, reduced to written form and signed by the parties within 9 months after its effective date, it is presumed to be retroactive.

26. Q: Are contracts to reinsure calendar-year incurred losses considered blended contracts that have both prospective and retroactive elements?

A: Yes. Most reinsurance contracts covering calendar-year incurred losses combine coverage for insured events that occurred prior to entering into the reinsurance contract with coverage for future insured events and, therefore, include both prospective and retroactive elements.

In any event, SSAP No. 62R provides that if a contract (except facultative contracts, contracts signed by the lead reinsurer and certain cover notes or similar documents signed by reinsurers

representing more than 50% of the capacity on the contract) has not been finalized, reduced to written form and signed by the parties within 9 months after its effective date it is presumed retroactive.

27. Q: When the prospective and retroactive portions of a contract are being accounted for separately, how should premiums be allocated to each portion of the contract?

A: No specific method for allocating the reinsurance premiums to the risks covered by the prospective and retroactive portions of a contract is required. However, separate accounting for the prospective and retroactive portions of a contract may take place only when an allocation is practicable.

Practicability requires a reasonable basis for allocating the reinsurance premiums to the risks covered by the prospective and retroactive portions of the contract, considering all amounts paid or deemed to have been paid regardless of the timing of payment. If a reasonable basis for allocating the premiums between the prospective and retroactive coverage does not exist, the entire contract must be accounted for as a retroactive contract.

28. Q: A retroactive reinsurance contract contains a cut-through provision that provides the ceding entity's policyholders and claimants with the right to recover their claims directly from the reinsurer. May the ceding entity immediately recognize earned surplus associated with this type of contract?

A: No. SSAP No. 62R states that earned surplus may not be recognized "until the actual retroactive reinsurance recovered exceeds the consideration paid."

29. Q: A ceding entity enters into a retroactive reinsurance agreement that gives rise to segregated surplus. If the reinsurer prepays its obligation under the contract, may the ceding entity recognize earned surplus at the time the prepayment is received?

A: Segregated surplus arising from retroactive reinsurance transactions is earned as actual liabilities that have been transferred are recovered or terminated. Therefore, earned surplus is based on when the reinsurer settles its obligations to the ceding entity, and it may be appropriate to recognize earned surplus at the time the prepayment is received.

However, all of the facts and circumstances must be considered to determine whether the ceding entity has substantively recovered the liabilities transferred to the reinsurer. For example, if the ceding entity agrees to compensate the reinsurer for the prepayment, such as by crediting the reinsurer with investment income on prepaid amounts or balances held, the ceding entity has not, in substance, recovered its transferred liabilities but rather has received a deposit from the reinsurer that should be accounted for accordingly.

30. Q: If the ceding entity does not expect to receive any recoveries because the reinsurer has agreed to reimburse claimants under the reinsured contracts directly, would the ceding entity be considered to have recovered or terminated its transferred liabilities?

A: No. In the example given, the reinsurer is substantively acting as disbursing agent for the ceding entity. Therefore, the ceding entity cannot be said to have recovered amounts due from the reinsurer before payment is made to the claimant.

31. Q: What accounting entries would a ceding entity make to report a retroactive reinsurance contract?

A: Accounting Entries for a Ceding Entity to Report a Retroactive Reinsurance Contract:

Entry 1		
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)	10,000	

Retroactive Reinsurance Gain (I/S)		2,000
Cash		8,000

To record initial portfolio transfer, see paragraph 34.c. and paragraph 34.h. The ceding entity must establish the segregated surplus per paragraph 34.d.

Entry 1A

Retro. Reins. Gain	2,000	
Profit/Loss Account		2,000

To close gain from retroactive transaction.

Entry 1B

Profit/Loss Account	2,000	
Special Surplus from Retro. Reins.		2,000

To close profit from retroactive reinsurance to special surplus.

Entry 2

Cash	2,000	
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)		2,000

To record recovery of paid losses from the reinsurer. Outstanding ceded reserves after this recovery equals $8,000, and special surplus from retroactive reinsurance account equals $2,000; therefore, segregated surplus account is not changed per paragraph 34.j.

Entry 3

Retroactive Reinsurance Reserves Ceded or Assumed (B/S)	3,000	
Retroactive Reinsurance Gain (I/S)		3,000

To record subsequent revision of the initial reserves ceded per paragraph 34.j. The segregated surplus account is increased to $5,000 as a result of this upward development.

Entry 3A

Retro. Reinsurance Gain	3,000	
Profit/Loss Account		3,000

To close profit from retroactive reinsurance.

Entry 3B

Profit/Loss (I/S)	3,000	
Special Surplus from Retro. Reins.		3,000

To close profit and loss account to special surplus. (Retroactive reinsurance reserves ceded or assumed account balance equals $11,000. Special Surplus from retroactive reinsurance balance equals $5,000.)

Entry 4

Cash	4,000	
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)		4,000

To record recovery of paid losses from the reinsurer. Outstanding ceded reserves after this recovery equals $7,000, therefore segregated surplus account is not changed per paragraph 34.j.

Entry 5		
Cash	3,000	
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)		3,000

To record recovery of paid losses from reinsurer. Outstanding ceded reserves after recovery equals $4,000, therefore the following entry is needed per paragraph 34.f. and paragraph 34.j.

Entry 5A		
Special Surplus—Retro. Reins.	1,000	
Unassigned Funds		1,000

Retroactive Reinsurance reserves ceded or assumed after this entry equals $4,000.

Entry 6		
Retroactive Reinsurance Loss (I/S)	1,000	
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)		1,000

To record subsequent revision of the initial reserves ceded per paragraph 34.j. The segregated surplus account is decreased as a result of this downward development to $3,000. The following entry is needed per paragraph 34.f. and paragraph 34.j.

Entry 6A		
Profit/Loss Account	1,000	
Retro. Reins. Loss		1,000

To close loss to profit and loss account.

Entry 6B		
Special Surplus from Retro. Reins.	1,000	
Profit/Loss Account		1,000

To close profit and loss account to special surplus. (Remaining balance of retroactive reinsurance reserve ceded or assumed account equals $3,000.) (Special surplus from retro. reins. account balance equals $3,000.)

Entry 7		
Cash	2,500	
Retroactive Reinsurance Gain (I/S)	500	
Retroactive Reinsurance Reserves Ceded or Assumed (B/S)		3,000

Entry 7A		
Profit and Loss Account	500	
Retro. Reins. Gain		500

To close other income to profit and loss account.

Entry 7B		
Special Surplus from Retro. Reins.	500	
Profit/Loss Account		500

To close profit and loss account to special surplus. (Remaining balance of special surplus from retro. reins. account equals $2,500.) (Remaining balance of retroactive reinsurance reserve ceded or assumed account -0-.)

Entry 7C		
Special Surplus from Retro. Reins.	2,500	
Unassigned Funds		2,500

To close remaining special surplus account to unassigned surplus.

32. Q: How should the parties account for an adverse loss development reinsurance contract where, as of the statement date, the attachment level of the contract exceeds the ceding company's current case and IBNR reserves for the covered accident years (i.e. no surplus gain and no reinsurance recoverable as of the statement date), and the ceding company transferred cash to the reinsurer at the inception of the contract?

A: An adverse loss development reinsurance contract covering prior accident years meets the definition of "retroactive reinsurance" set forth in paragraph 26 of SSAP No. 62R:

> ….reinsurance in which a reinsurer agrees to reimburse a ceding entity for liabilities incurred as a result of past insurable events covered under contracts subject to the reinsurance….

Paragraph 34.k. of SSAP No. 62R specifically provides that the consideration paid for a retroactive reinsurance contract is to be recorded as a decrease in ledger assets by the ceding entity and an increase in ledger assets by the assuming entity.

Question 31 illustrates the accounting entries for retroactive reinsurance contracts.

If the retroactive reinsurance contract transfers both components of insurance risk then, pursuant to paragraph 34 of SSAP No. 62R, the ceding company would record the consideration paid as a decrease in ledger assets, recognize an expense for the reinsurance ceded through Other Income or Loss accounts as a write-in item identified as "Retroactive Reinsurance Ceded", and record the recoverable from the reinsurer as a contra liability.

No contra liability is established until and unless (and then only to the extent that) the ceding company establishes reserves which exceed the attachment point.

For the contract described, at inception no contra liability is recorded to offset current liability for the business ceded, since the ceded retroactive reinsurance premium relates to coverage in excess of the current liabilities recorded by the ceding company.

Once the ceding company's recorded liabilities exceed the attachment point of the adverse loss development reinsurance contract and triggers reinsurance recoverable from the reinsurer, a contra liability is established by the ceding company for the amount of the reinsurance recoverable. Any surplus resulting from the retroactive reinsurance is carried as a write-in item on the balance sheet designated as "Special Surplus from Retroactive Reinsurance Account." The surplus gain may not be classified as unassigned funds (surplus) until the actual retroactive reinsurance recovered exceeds the consideration paid.

If any portion of a retroactive reinsurance contract does not transfer insurance risk, then the portion which does not transfer risk is accounted for as a deposit pursuant to paragraph 40. The deposit is reported as an admitted asset of the ceding company if the reinsurer is licensed, accredited, certified

or otherwise qualified in the ceding company's state of domicile as described in Appendix A-785, or if there are funds held by or on behalf of the ceding company as described in that appendix. Receipts and disbursements under the contract are recorded through the deposit/liability accounts. Amounts received in excess of the deposit made are recognized as a gain in the Other Income or Loss account.

Accounting entries for a ceding entity to report a retroactive reinsurance contract at the inception of which the cedent's reserves are lower than the attachment point of the reinsurance coverage:

Assume the company pays $16m to purchase adverse development coverage of $50m, above an attachment point.

Entry 1: Payment of Retrospective Reinsurance Premium

Retrospective Reinsurance Expense*	$16m	
Cash		$16m

The company pays $16m premium for the retrospective reinsurance contract.
*This is an Other Expense item, it does not flow through Schedule F or Schedule P.

Entry 2: Adverse Development Reaches the Attachment Point

Losses Incurred	$25m	
Gross Loss Reserve		$25m
Recoverable on Retro Reinsurance Contract**	$25m	
Other Income*		$9m
Contra – Retro Reinsurance Expense*		$16m
Surplus***	$9m	
Segregated Surplus***		$9m

The company incurs $25m development on reserves related to the contract.
*These are Other Income/Expense items do not flow through Schedule F or Schedule P.
**A contra-liability write-in item, not netted against loss reserves.
***Surplus is segregated in the amount of [$25m - $16m = $9m] recoverables less consideration paid.

Entry 3: Cash is Recovered on Paid Losses

Cash	$20m	
Recoverable on Retrospective Reinsurance Contract		$20m
Segregated Surplus	$4m	
Surplus		$4m

The company recovers $20m cash from reinsurer on this retro contract. Segregated Surplus decreases in the amount of [$20m - $16m = $4m] (decreases for amount recovered in excess of consideration paid).

33. Q: How should a ceding company account for payment of the premium for a retroactive reinsurance contract by the ceding company's parent company or some other person not a party to the reinsurance contract (for example, adverse loss development reinsurance contracts purchased by the parent company in the context of the purchase or sale of the ceding company)?

A: If the reinsurance premium is not paid directly by the ceding company but is instead paid on behalf of the ceding company by the ceding company's parent company or some other entity not a party to the reinsurance contract, then the ceding company should (1) record an increase in gross paid in and contributed surplus in the amount of the reinsurance premium to reflect the contribution to surplus by the parent or third party payor, and (2) record an expense in the amount of the reinsurance premium and account for the contract as provided in questions 31 and 32.

EXHIBIT B – P&C RUNOFF REINSURANCE TRANSACTIONS

The following provides illustrative journal entries for P&C Runoff Reinsurance Transactions.

Example 1: Transfer of existing block of runoff business **with no residual UPR** on books of Transferor

Cedent/Transferor		**DR**	**CR**
Day 1 – Cedent transfers 50,000 in reserves for 50,000			
Ceded Reinsurance Recoverable (U&I Part 2A & Sch. F)	Contra Liab ↑	50,000	
Cash	Asset ↓		50,000
Losses Paid (U/W Part 2 & Sch. P)	I/S ↓	50,000	
Change in Reserves - Incurred Losses (U&I Part 2)	I/S ↑		50,000
Unlike novation, gross reserves stay on books of transferor			
Day 360 – Negative Development on Transferred Business - 3,000			
Reinsurance Recoverable on Unpaid Losses (Sch. F)	Contra Liab ↑	3,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		3,000
Day 540 – Reinsurer Pays the Loss @ Reported Reserve			
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↓	53,000	
Ceded Reinsurance Recoverable (U&I Part 2A & Sch. F)	Contra Liab ↓		53,000
Reinsurer/ Transferee			
Day 1 – Cedent transfers 50,000 in reserves for 50,000			
Cash	Asset ↑	50,000	
Reported Losses on Reins. Assumed (U&I Part 2A & Sch. P)	Liab ↑		50,000
Change In Reserves – Incurred Losses (U&I Part 2)	I/S ↓	50,000	
Losses Paid or Incurred (negative) (U&I Part 2 & Sch. P)	I/S ↑		50,000
Day 360 – Negative Development on Transferred Business - 3,000:			
Change in Reserves – Incurred Losses (U&I Part 2)	I/S↓	3,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		3,000
Day 540 – Reinsurer Pays the Loss			
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↓	53,000	
Cash	Asset ↓		53,000

Comments:
Since the Transferor is ceding incurred losses neither party should have premium impacted. To do that would distort many financial ratios.

Example 2: Transfer of existing block of runoff business **with some residual UPR** of 10,000 on books of Transferor (this should be less common).

Cedent/Transferor		**DR**	**CR**
Day 1 – Cedent transfers 50k in reserves & 10k UPR for 60,000			
Ceded Reinsurance Recoverable (U&I Part 2A & Sch. F)	Contra Liab ↑	50,000	
Unearned Premium Reserve (U&I Part 1 & 1A)	Liab ↓	10,000	
Cash	Asset ↓		60,000
Ceded Premium Written (U&I Part 1B)	I/S ↓	10,000	
Losses Paid (U&I Part 2 & Sch. P)	I/S ↓	50,000	
Change in Reserves - Incurred Losses (U&I Part 2)	I/S ↑		50,000
Change in UPR (U&I Part 1 & 1A)	I/S ↑		10,000
Unlike novation, gross reserves stay on books of transferor			
Day 180 – Premium is Fully Earned (Assumes 80% Loss Ratio)			
Ceded Reinsurance Recoverable (U&I Part 2A & Sch. F)	Contra Liab ↑	8,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		8,000
To mirror the increase in unpaid losses by the transferee			
Day 360 – Negative Development on Transferred Business - 3,000:			
Reinsurance Recoverable on Unpaid Losses (Sch. F)	Contra Liab ↑	3,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		3,000
Day 540 – Reinsurer Pays the Loss @ Reported Reserves (50+8+3)			
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↓	61,000	
Ceded Reinsurance Recoverable (U&I Part 2A & Sch. F)	Contra Liab ↓		61,000

Reinsurer/Transferee			
Day 1 – Cedent transfers 50k in reserves & 10k UPR for 60,000			
Cash	Asset ↑	60,000	
Reported Losses on Reins. Assumed (U&I Part 2A & Sch. P)	Liab ↑		50,000
Unearned Premium Reserve (U&I Part 1 & 1A)	Liab ↑		10,000
Assumed Premium Written (U&I Part 1B)	I/S ↑		10,000
Change In Reserves – Incurred Losses (U&I Part 2)	I/S ↓	50,000	
Change in UPR (U&I Part 1 & 1A)	I/S ↓	10,000	
Losses Paid or Incurred (negative) (U&I Part 2 & Sch. P)	I/S ↑		50,000
Day 180 – Premium is Fully Earned (Assumes 80% Loss Ratio)			
Unearned Premium Reserve (U&I Part 1 & 1A)	Liab ↓	10,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		8,000
Change In Reserves – Incurred Losses (U&I Part 2)	I/S↓	8,000	
Change in UPR (U&I Part 1 & 1A)	I/S ↑		10,000
To record the increase in unpaid losses by the transferee			
Day 360 – Negative Development on Transferred Business -3,000:			
Change In Reserves – Incurred Losses (U&I Part 2)	I/S↓	3,000	
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↑		3,000
Day 540 – Reinsurer Pays the Loss @ Reported Reserves (50+8+3)			
Reserves for Unpaid Losses (U&I Part 2A & Sch. P)	Liab ↓	61,000	
Cash	Asset ↓		61,000

Comments:
In this second example, the portion of the runoff business that has an UPR associated with it is essentially booked as prospective reinsurance. Other elements of the example are the same except that we assumed an 80% loss ratio on the unearned portion of the business.

EXHIBIT C – ILLUSTRATION OF A REINSURANCE CONTRACT THAT IS ACCOUNTED FOR AS A DEPOSIT USING THE INTEREST METHOD

Assumptions:

Premium = $1,000 (assumes no commissions or allowances)
Coverage Period = 1 year
Initial expected recoveries = $225 per year (at end of year) for five years
Initial Implicit rate = 4 percent*

*present value of $225 per year for five years at 4 percent = $1,000

At the end of Year 2, the timing of anticipated recoveries under the reinsurance contract changes. A reevaluation of the implicit interest rate produces a rate of 3.63 percent and an asset of $640 at the end of the year.

Description	Interest Income	Cash Recoveries	Deposit Balance
Initial payment			$1,000
Year 1 (4%)	$ 40		$1,040
End of Year 1		$ (225)	$ 815
Year 2 (4%)	$ 33		$ 848
End of Year 2		$ (200)	$ 648
Yield Adjustment	$ (8)		$ 640
Year 3 (3.63%)	$ 23		$ 663
End of Year 3		$ (175)	$ 488
Year 4 (3.63%)	$ 18		$ 506
End of Year 4		$ (175)	$ 331
Year 5 (3.63%)	$ 12		$ 343
End of Year 5		$ (175)	$ 168
Year 6 (3.63%)	$ 7		$ 175
End of Year 6		$ (175)	$ 0

At the inception of the contract, the ceding insurer records a deposit asset of $ 1,000 and the assuming company, a $1,000 deposit liability. The asset is admitted providing the conditions for credit for reinsurance are met.

At subsequent reporting dates, the deposit asset is adjusted by calculating the effective yield on the reinsurance agreement to reflect actual payments to date and expected future payments with a corresponding credit to interest income by the ceding company and interest expense by the assuming company.

At the end of year two, it is determined that the expected cash flows will differ from previous estimates, resulting in a lower effective yield on the deposit asset. The deposit asset is adjusted to the amount that would have existed at the reporting date had the new effective yield been applied from the inception of the reinsurance agreement. The adjustment is charged to interest income, i.e., as a reduction of interest income. Interest income during the remaining term of the agreement is reduced accordingly (i.e., the yield is reduced from 4.0% to 3.63%).

EXHIBIT D – ILLUSTRATION OF ASBESTOS AND POLLUTION COUNTERPARTY REPORTING EXCEPTION

SCHEDULE F – PART 3[3]
Aging of Ceded Reinsurance as of December 31, Current Year
(000 Omitted)

1	2	3	4	5	6	Reinsurance Recoverable On		
						7	8	9
ID Number	NAIC Company Code	Name of Reinsurer	Domiciliary Jurisdiction	Special Code	Reinsurance Premiums Ceded	Paid Losses	Paid LAE	Known Case Loss Reserves
FEIN	####	Retroactive Reinsurer X	NE	3		3,000	3,000	15,000
FEIN	####	Original Company A	US	3				5,000
Subtotal Other U.S. Authorized						**3,000**	**3,000**	**20,000**
AA-	####	Original Company B	UK	3		12,000	9,000	2,500
AA-	####	Original Company C	UK	3		6,000	3,000	7,500
Subtotal Other Non-U.S. Unauthorized						**18,000**	**12,000**	**10,000**
999999 Totals						**21,000**	**15,000**	**30,000**

Reinsurance Recoverable On				16	Reinsurance Payable		19	Collateral	
10	11	12	15		17	18		24	25
Known Case LAE Reserves	IBNR Loss Reserves	IBNR LAE Reserves	Cols. 7 through 14 Totals	Amount in Dispute Included in Column 15	Ceded Balances Payable	Other Amounts Due to Reinsurers	Net Amount Recoverable from Reinsurers Cols. 15 – [17 + 18]	Single Beneficiary Trusts Other Allowable Collateral	Total Funds Held Payables and Collateral
15,000	25,000[4]	37,500	98,500		6,000		92,500		
2,500	10,000	15,000	32,500				32,500		
17,500	**35,000**	**52,500**	**131,000**		**6,000**		**125,000**		
7,500	12,500	5,000	48,500				48,500	48,500	48,500
5,000	2,500	17,500	41,500				41,500	41,500	41,500
12,500	**15,000**	**22,500**	**90,000**				**90,000**	**90,000**	**90,000**
30,000	**50,000**	**75,000**	**221,000**		**6,000**		**215,000**	**90,000**	**90,000**

Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses						
	Overdue					
37	38	39	40	41	42	43
Current Reinsurance Recoverable on Paid Losses and Paid LAE	1 to 29 days Reinsurance Recoverable on Paid Losses and Paid LAE	30 to 90 days Reinsurance Recoverable on Paid Losses and Paid LAE	91 to 120 days Reinsurance Recoverable on Paid Losses and Paid LAE	Over 120 days Reinsurance Recoverable on Paid Losses and Paid LAE	Total Overdue Reinsurance Recoverable on Paid Losses and Paid LAE	Total Due Reinsurance Recoverable on Paid Losses and Paid LAE Cols. 37 + 42 (In total should equal Cols. 7 + 8)
6,000						6,000
6,000						**6,000**
21,000						21,000
9,000						9,000
30,000						**30,000**
36,000						**36,000**

[3] Note that unused columns have been removed for this exhibit.

[4] This example assumes 1/2 of the original company reinsurers' unpaid recoverables are Asbestos and Pollution related.

SUPPLEMENTAL SCHEDULE FOR REINSURANCE COUNTERPARTY REPORTING EXCEPTION – ASBESTOS AND POLLUTION CONTRACTS

For The Year Ended December 31, 20___ ($000 Omitted)

1 ID Number (Original Reinsurer)	2 NAIC Company Code (Original Reinsurer)	3 Name of Reinsurer (Original Reinsurer)	4 Domiciliary Jurisdiction (Original Reinsurer)	5 ID] Number (Retroactive Reinsurer)	6 Name of Retroactive Reinsurer Reported in Sch. F Part 3 (Retroactive Reinsurer)	Reinsurance Recoverable On				
						7 Paid Losses	8 Paid LAE	9 Unpaid Case Losses & LAE	10 IBNR Losses & LAE	11 Cols. 7+ 8+9+10 Totals
		Original Company A	US		Retroactive Reinsurer X	1,000	1,000	7,500	25,000	34,500
Subtotal Authorized						**1,000**	**1,000**	**7,500**	**25,000**	**34,500**
		Original Company B	UK		Retroactive Reinsurer X	1,000	1,000	10,000	17,500	29,500
		Original Company C	UK		Retroactive Reinsurer X	1,000	1,000	12,500	20,000	34,500
Subtotal Other Non-U.S. Unauthorized						**2,000**	**2,000**	**22,500**	**37,500**	**64,000**
9999999 Totals						**3,000**	**3,000**	**30,000**	**62,500**	**98,500**

Original Reinsurer Collateral			15	Reinsurance Recoverable On Paid Losses and Paid Loss Adjustment Expenses						23	24
12 Funds Held (Original Reinsurer)	13 Letters Of Credit (Original Reinsurer)	14 Trust Funds And Other Allowed Offset Items	Amounts Approved As Other Allowed Offset Items	16	Overdue				22		
				Current	17 1 – 29 Days	18 30 – 90 Days	19 91 – 120 Days	20 Over 120 Days	21 Total Overdue	Total Due	Percentage Overdue	Percentage More Than 90 Days Overdue
-	-	-	(a) 2,000	2,000	-	-	-	-	-	2,000	-	-
-	**-**	**-**	**-**	**2,000**						**2,000**		
-	-	-	29,500	2,000	-	-	-	-	-	2,000	-	-
-	-	-	34,500	2,000	-	-	-	-	-	2,000	-	-
-	**-**	**-**	**64,000**	**4,000**						**4,000**		
-	**-**	**-**	**64,000 (b)**	**6,000**	**-**	**-**	**-**	**-**	**-**	**6,000**		

(a) Amount is zero because available offsets are not applied for authorized reinsurers under the credit for reinsurance model.

(b) Annual statement Note 1 would disclose total impacts to the provision for reinsurance composed of 1) $64,000 (impact for unauthorized/uncollateralized) plus 2) reduction to the provision for overdue.

Statement of Statutory Accounting Principles No. 63

Underwriting Pools

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	No other pronouncements
Affected by	No other pronouncements
Interpreted by	INT 03-02
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for underwriting pools and associations.

SUMMARY CONCLUSION

2. Underwriting pools and associations can be categorized as follows: (a) involuntary, (b) voluntary, and (c) intercompany.

3. Involuntary pools represent a mechanism employed by states to provide insurance coverage to those with higher than average probability of loss who otherwise would be excluded from obtaining coverage. Reporting entities are generally required to participate in the underwriting results, including premiums, losses, expenses, and other operations of involuntary pools, based on their proportionate share of similar business written in the state. Involuntary plans are also referred to as residual market plans, involuntary risk pools, and mandatory pools.

4. Voluntary pools are similar to involuntary pools except they are not state mandated and a reporting entity participates in the pool voluntarily. In addition, voluntary pools are not limited to the provision of insurance coverage to those with higher than average probability of loss, but often are used to provide greater capacity for risks with exceptionally high levels of insurable values (e.g., aircraft, nuclear power plants, refineries, and offshore drilling platforms).

5. Intercompany pooling relates to business which is pooled among affiliated entities who are party to a pooling arrangement.(INT 03-02)

6. Participation in a pool may be on a joint and several basis, i.e., in addition to a proportional share of losses and expenses incurred by the pool, participants will be responsible for their share of any otherwise unrecoverable obligations of other pool participants. In certain instances, one or more entities may be designated as servicing carriers for purposes of policy issuance, claims handling, and general administration of the pooled business, while in other cases a pool manager or administrator performs all of these functions and simply bills pool participants for their respective shares of all losses and expenses incurred by the pool. In either case, liabilities arising from pooled business are generally incurred on a basis similar to those associated with non-pooled business, and should therefore be treated in a manner consistent with the guidelines set forth in *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets*.

7. Intercompany pooling arrangements involve establishment of a conventional quota share reinsurance agreement under which all of the pooled business is ceded to the lead entity and then retroceded back to the pool participants in accordance with their stipulated shares. Arrangements whereby there is one lead company that retains 100% of the pooled business and all or some of the affiliated companies have a 0% net share of the pool may qualify as intercompany pooling. In these arrangements, only the policy issuing entity has direct liability to its policyholders or claimants; other pool participants are liable as reinsurers for their share of the issuing entity's obligations. Although participants may use different assumptions (e.g., discount rates) in recording transactions, the timing of recording transactions shall be consistently applied by all participants.

8. Underwriting results relating to voluntary and involuntary pools shall be accounted for on a gross basis whereby the participant's portion of premiums, losses, expenses, and other operations of the pools are recorded separately in the financial statements rather than netted against each other. Premiums and losses shall be recorded as direct, assumed, and/or ceded as applicable. If the reporting entity is a direct writer of the business, premiums shall be recorded as directly written and accounted for in the same manner as other business which is directly written by the entity. To the extent that premium is ceded to a pool, premiums and losses shall be recorded in the same manner as any other reinsurance arrangement. A reporting entity who is a member of a pool shall record its participation in the pool as assumed business as in any other reinsurance arrangement.

9. Underwriting results relating to intercompany pools shall be accounted for and reported as described in paragraph 8. While it is acceptable that intercompany pooling transactions be settled through intercompany arrangements and accounts, intercompany pooling transactions shall be reported on a gross basis in the appropriate reinsurance accounts consistent with other direct, assumed and ceded business.

10. Equity interests in, or deposits receivable from, a pool represent cash advances to provide funding for operations of the pool. These are admitted assets and shall be recorded separately from receivables and payables related to a pool's underwriting results. Receivables and payables related to underwriting results shall be accounted for in accordance with the guidance in paragraphs 6-8. If it is probable that these receivables are uncollectible, any uncollectible amounts shall be written off against operations in the period such determination is made. If it is reasonably possible a portion of the balance is uncollectible but is not written off, disclosure requirements outlined in SSAP No. 5R shall be followed.

Disclosures

11. If a reporting entity is part of a group of affiliated entities which utilizes a pooling arrangement under which the pool participants cede substantially all of their direct and assumed business to the pool, the financial statements shall include:

a. A description of the basic terms of the arrangement and the related accounting;

b. Identification of the lead entity and of all affiliated entities participating in the intercompany pool (include NAIC Company Codes) and indication of their respective percentage shares of the pooled business;

c. Description of the lines and types of business subject to the pooling agreement;

d. Description of cessions to non-affiliated reinsurers of business subject to the pooling agreement, and indication of whether such cessions were prior to or subsequent to the cession of pooled business from the affiliated pool members to the lead entity;

e. Identification of all pool members which are parties to reinsurance agreements with non-affiliated reinsurers covering business subject to the pooling agreement and which have a contractual right of direct recovery from the non-affiliated reinsurer per the terms of such reinsurance agreements;

f. Explanation of any discrepancies between entries regarding pooled business on the assumed and ceded reinsurance schedules of the lead entity and corresponding entries on the assumed and ceded reinsurance schedules of other pool participants;

g. Description of intercompany sharing, if other than in accordance with the pool participation percentage, of the Aging of Ceded Reinsurance (Schedule F, Part 3) and the write–off of uncollectible reinsurance;

h. Amounts due to/from the lead entity and all affiliated entities participating in the intercompany pool as of the balance sheet date.

12. Refer to the Preamble for further discussion regarding disclosure requirements.

Effective Date and Transition

13. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

REFERENCES

Relevant Issue Papers

- *Issue Paper No. 97—Underwriting Pools and Associations Including Intercompany Pools*

Statement of Statutory Accounting Principles No. 65

Property and Casualty Contracts

STATUS

Type of Issue	Property and Casualty
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	Nullifies and incorporates INT 02-10
Affected by	No other pronouncements
Interpreted by	No other pronouncements
Relevant Appendix A Guidance	None

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for property and casualty insurance contracts. Topics not covered by this statement shall comply with the more general statutory accounting guidance.

2. Topics specific to title insurance, mortgage guaranty insurance, and financial guaranty insurance are not within the scope of this statement. These topics are addressed in *SSAP No. 57—Title Insurance*, *SSAP No. 58—Mortgage Guaranty Insurance*, and *SSAP No. 60—Financial Guaranty Insurance*.

SUMMARY CONCLUSION

3. Property and casualty insurance contracts can be written to cover insured events on the following reporting bases:

a. Occurrence—These policies cover insured events that occur within the effective dates of the policy regardless of when they are reported to the reporting entity. Liabilities for losses on these policies shall be recorded when the insured event occurs;

b. Claims-made—These policies cover insured events that are reported (as defined in the policy) within the effective dates of the policy, subject to retroactive dates when applicable. Liabilities for losses on these policies shall be recorded when the event is reported to the reporting entity; and

c. Extended reporting—Endorsements to claims-made policies covering insured events reported after the termination of a claims-made contract but subject to the same retroactive dates where applicable. See paragraphs 7 and 8 for guidance for when premium shall be earned and losses shall be recorded.

Claims-Made Policies

4. Normally, when claims-made coverage is obtained, existing coverage is being replaced. The existing coverage may have been a claims-made policy or an occurrence policy. In either case, in an effort to reduce premium costs, the insured may request that the claims-made coverage cover only claims reported within the effective dates of the policy that occur after a specified date. This specified date is referred to as the retroactive date of the claims-made policy and eliminates duplicate coverage when converting from occurrence coverage to claims-made coverage.

5. The liability for an insured event shall be determined in accordance with *SSAP No. 55—Unpaid Claims, Losses and Loss Adjustment Expenses*.

6. Extended reporting endorsements, commonly referred to as tail coverage, allow extended reporting of insured events after the termination of a claims-made contract. Extended reporting endorsements modify the exposure period of the underlying contract and can be for a defined period (e.g., six months, one year, five years) or can be for an indefinite period.

7. When a reporting entity issues an extended reporting endorsement or contract and the preceding claims-made policy terminates, the reporting entity assumes liability for unreported claims and expense. This extended reporting coverage can be issued for an indefinite period or a fixed period. For indefinite reporting periods, premium shall be fully earned and loss and expense liability associated with unreported claims shall be recognized immediately. For coverage for a fixed period, premium shall be earned over the term of the fixed period, the reporting entity shall establish an unearned premium reserve for the unexpired portion of the premium and shall record losses as reported.

8. Some claims-made policies provide extended reporting coverage at no additional charge in the event of death, disability, or retirement of a natural person insured. In such instance, a policy reserve is required to assure that premiums are not earned prematurely. The amount of the reserve should be adequate to pay for all future claims arising from these coverage features, after recognition of future premiums to be paid by current insureds for these benefits. The reserve, entitled “extended reporting endorsement policy reserve” shall be classified as a component part of the unearned premium reserve considered to run more than one year from the date of the policy.

9. When the anticipated losses, loss adjustment expenses, and maintenance costs anticipated to be reported during the extended reporting period exceed the recorded unearned premium reserve for a

claims-made policy, a premium deficiency reserve shall be recognized in accordance with *SSAP No. 53—Property Casualty Contracts—Premiums*.

Discounting

10. With the exception of fixed and reasonably determinable payments such as those emanating from workers' compensation tabular indemnity reserves and long-term disability claims, property and casualty loss reserves shall not be discounted. No loss adjustment expense reserves shall be discounted.

11. Tabular reserves are indemnity reserves that are calculated using discounts determined with reference to actuarial tables which incorporate interest and contingencies such as mortality, remarriage, inflation, or recovery from disability applied to a reasonably determinable payment stream. Tabular reserves shall not include medical loss reserves or loss adjustment expense reserves.

12. Due to several instances in which states have prescribed or permitted practices to allow discounting on a non-tabular basis, recommended guidelines for discounting non-tabular unpaid loss and LAE are provided within Exhibit A. If a state has a prescribed or permitted practice allowing the use of discounts, or if discounting is utilized in accordance with this SSAP, financial statement disclosures are required in accordance with paragraphs 13-16.

13. In accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*, a change in the discount rate used in discounting loss reserves shall be accounted for as a change in estimate. SSAP No. 3 requires changes in estimates to be included in the statement of income in the period the change becomes known.

14. The financial statements shall disclose whether or not any of the liabilities for unpaid losses or unpaid loss adjustment expenses are discounted, including liabilities for workers' compensation. The following disclosures, for each line of business, shall be made separately:

a. Table(s) used;

b. Rate(s) used;

c. The amount of discounted liability reported in the financial statement;

d. The amount of tabular discount, by the line of business and reserve category (i.e., case and Incurred But Not Reported (IBNR));

e. The amount of interest accretion recognized in the statement of income; and

f. The line item(s) in the statement of income in which the interest accretion is classified.

15. If the rate(s) used to discount prior accident years' liabilities have changed from the previous financial statement or if there have been changes in other key discount assumptions such as payout patterns, the financial statements shall disclose:

a. Amount of discounted current liabilities at current rate(s) and assumption(s) (exclude the current accident year);

b. Amount of discounted current liabilities at previous rate(s) and assumption(s) (exclude the current accident year);

c. Change in discounted liability due to change in interest rate(s) and assumption(s); and

d. Amount of non-tabular discount, by line of business and reserve category (i.e., case, defense and cost containment, adjusting and other).

16. Refer to the Preamble for further discussion regarding disclosure requirements.

Structured Settlements

17. Structured settlements are periodic fixed payments to a claimant for a determinable period, or for life, for the settlement of a claim. Frequently a reporting entity will purchase an annuity to fund the future payments. Reporting entities may purchase an annuity in which the entity is the owner and payee, or an annuity in which the claimant is the payee. When annuities are purchased to fund periodic fixed payments, they shall be accounted for as follows:

a. When the reporting entity is the owner and payee, no reduction shall be made to loss reserves. The annuity shall be recorded at its present value and reported as an other-than-invested asset. Income from the annuities shall be recorded as miscellaneous income. The present value of the annuity and the related amortization schedule shall be obtained from the issuing life insurance company at the time the annuity is purchased; and

b. When the claimant is the payee, loss reserves shall be reduced to the extent that the annuity provides for funding of future payments. The cost of the annuities shall be recorded as paid losses.

18. Statutory accounting and Generally Accepted Accounting Principles (GAAP) are consistent for the accounting of structured settlement annuities where the reporting entity is the owner and payee, and where the claimant is the owner and payee and the reporting entity has been released from its obligation. GAAP distinguishes structured settlement annuities where the owner is the claimant and a legally enforceable release from the reporting entity's liability is obtained from those where the claimant is the owner and payee but the reporting entity has not been released from its obligation. GAAP requires the deferral of any gain resulting from the purchase of a structured settlement annuity where the claimant is the owner and payee yet the reporting entity has not been released from its obligation. Statutory accounting treats these settlements as completed transactions and considers the earnings process complete, thereby allowing for immediate gain recognition.

19. The following information regarding structured settlements shall be disclosed in the financial statements:

a. The amount of reserves no longer carried by the reporting entity because it has purchased annuities with the claimant as payee, and the extent to which the reporting entity is contingently liable for such amounts should the issuers of the annuities fail to perform under the terms of the annuities; and

b. The name, location, and aggregate statement value of annuities due from any life insurer to the extent that the aggregate value of those annuities equal or exceed 1% of policyholders' surplus. This disclosure shall only include those annuities for which the reporting entity has not obtained a release of liability from the claimant as a result of the purchase of an annuity. The reporting entity shall also disclose whether the life insurers are licensed in the reporting entity's state of domicile.

20. Refer to the Preamble for further discussion regarding disclosure requirements.

Policies with Coverage Periods Equal to or in Excess of Thirteen Months

21. Some property and casualty insurance contracts are written for coverage periods that equal or exceed thirteen months. These contracts may be single premium or fixed premium policies, and generally

are not subject to cancellation or premium modification by the reporting entity. The most common policies with such coverage periods are home warranty and mechanical breakdown policies. Accordingly, this guidance is primarily focused on home warranty and mechanical breakdown policies and does not apply to multiple-year contracts comprised of single-year policies, each of which have separate premiums and annual aggregate deductibles.

22. Revenues are generally not received in proportion to the level of exposure or period of exposure. In order to recognize the economic results of the contract over the contract period, a liability shall be established for the estimated future policy benefits while taking into account estimated future premiums to be received. Unearned premiums shall be recorded in accordance with paragraphs 23-33 of this statement.

23. Paragraphs 24-33 shall apply to all direct and assumed contracts or policies ("contracts"), excluding financial guaranty contracts, mortgage guaranty contracts, and surety contracts, that fulfill both of the following conditions:

a. The policy or contract term is greater than or equal to 13 months; and

b. The reporting entity can neither cancel the contract, nor increase the premium during the policy or contract term.

24. At any reporting date prior to the expiration of the contracts, the reporting entity is required to establish an adequate unearned premium reserve, to be reported as the unearned premium reserve. For each of the three most recent policy years, the gross (i.e., direct plus assumed) unearned premium reserve shall be no less than the largest result of the three tests described in paragraphs 27-29. For years prior to the three most recent policy years, the gross unearned premium reserve shall be no less than the larger of the aggregate result of Test 1 or the aggregate result of Test 2 or the aggregate result of Test 3 taken over all of those policy years.

25. Any reserve credit applicable for reinsurance ceded shall be appropriately reflected in the financial statements with the resulting net unearned premium reserve being established by the reporting entity.

26. The projected losses and expenses may be reduced for expected salvage and subrogation recoveries, but may not be reduced for anticipated deductible recoveries, unless the deductibles are secured by a letter of credit (LOC) or like security. Projected salvage and subrogation recoveries (net of associated expenses) shall be established based on reporting entity experience, if credible; otherwise, based on industry experience.

27. Test 1 is management's best estimate of the amounts refundable to the contractholders at the reporting date.

28. Test 2 is the gross premium multiplied by the ratio of paragraph 28.a. to paragraph 28.b.:

a. Projected future gross losses and expenses to be incurred during the unexpired term of the contracts; and

b. Projected total gross losses and expenses under the contracts.

29. Test 3 is the projected future gross losses and expenses to be incurred during the unexpired term of the contracts as adjusted below, reduced by the present value of the future guaranteed gross premiums, if any.

a. A provision for investment income is permitted in the unearned premium reserve only with respect to the projected future losses and expenses used to determine the unearned premium reserve, and not with respect to incurred but unpaid losses and expenses;

b. A provision for investment income on projected future losses and expenses may be calculated to the expected date the loss or expense is incurred, not from the expected date of payment;

c. The rate of interest used to calculate the provision for investment income shall be reviewed and changed as necessary at each reporting date and shall not exceed the lesser of the following two standards:

i. The reporting entity's future net yield to maturity on statutory invested assets as shown in Schedule D, less a 1.5% actuarial provision for adverse deviations; or

ii. The current yield to maturity on a United States Treasury debt instrument maturing in five (5) years as of the reporting date.

d. The reporting entity's statutory invested assets shall be reduced by the loss and loss adjustment expense reserves on unpaid losses and expenses to calculate "available invested assets." If the available invested assets are less than the result of Test 3, as calculated above, an "invested asset shortfall" exists. In this event, the Test 3 reserve shall be recalculated with the provision for investment income based on the restricted amount of available invested assets.

30. For the purposes of Tests 2 and 3 of paragraphs 28 and 29, "expenses" shall include all incurred and anticipated expenses related to the issuance and maintenance of the policy, including loss adjustment expenses, policy issuance and maintenance expenses, commissions, and premium taxes.

31. The projected future losses and expenses are to be re-estimated for each reporting date, and the most recent estimate of these projected losses and expenses is to be used in these Tests. If a range is selected and no single point in the range is identified as being the most likely, then the midpoint of management's estimate of the range shall be used. For purposes of this statement, it is assumed that management can quantify the high end of the range. If management determines that the high end of the range cannot be quantified, then a range does not exist, and management's best estimate shall be accrued.

32. The reporting entity shall provide an Actuarial Opinion and Report in conformity with the NAIC *Annual Statement Instructions for Property and Casualty Insurers*. Exhibit A of the actuarial opinion shall include the following three items: 1) the Reserve for Direct and Assumed Unearned Premiums; 2) the Reserve for Net Unearned Premiums; and 3) any other premium reserve items on which an opinion is being expressed. If any of these three items are material, the material item(s) must also be covered in the opinion and relevant comments of the actuarial opinion.

33. The actuarial report shall include a description of the manner in which the adequacy of the amount of security for deductibles and self-insured retentions is determined. The actuarial report need not assess the credit-worthiness of the specific securities (e.g. LOC's), but the actuarial opinion must report collectibility problems if known to the actuary.

High Deductible Policies

34. Certain policies, particularly workers' compensation coverage, are available under high deductible plans. High deductible plans differ from self insurance coupled with an excess of loss policy because state laws generally require the reporting entity to fund the deductible and to periodically review the financial viability of the insured and make an assessment of the suitability of the deductible plan to the insured.

35. The liability for loss reserves shall be determined in accordance with SSAP No. 55. Because the risk of loss is present from the inception date, the reporting entity shall reserve losses throughout the policy period, not over the period after the deductible has been reached. Reserves for claims arising under high deductible plans shall be established net of the deductible, however, no reserve credit shall be permitted for any claim where any amount due from the insured has been determined to be uncollectible.

36. If the policy form requires the reporting entity to fund all claims including those under the deductible limit, the reporting entity is subject to credit risk, not underwriting risk. Reimbursement of the deductible shall be accrued and recorded as a reduction of paid losses simultaneously with the recording of the paid loss by the reporting entity.

37. If the reporting entity does not hold specific collateral for the policy, amounts accrued for reimbursement of the deductible shall be billed in accordance with the provisions of the policy or the contractual agreement and shall be aged according to the contractual due date. In the absence of a contractual due date, billing date shall be utilized for the aging requirement. Deductible recoverables that are greater than ninety days old shall be nonadmitted. However, if the reporting entity holds specific collateral for the high deductible policy, ten percent of deductible recoverable in excess of collateral specifically held and identifiable on a per policy basis, shall be reported as a nonadmitted asset in lieu of applying the aging requirement; however, to the extent that amounts in excess of the 10% are not anticipated to be collected they shall also be nonadmitted. The collateral requirements of this paragraph may be satisfied when an insured provides one collateral instrument to secure amounts owed under multiple policies, provided that the reporting entity has the contractual right to apply the collateral to the high deductible policy. Collateral obtained at a group level that is not supported by an existing pooling agreement requires a written allocation agreement among all collateral beneficiaries. The terms of such agreement must be fair and equitable. Documentation supporting any allocation of collateral among reporting entities must be maintained to allow proper calculation of the nonadmitted amounts and prohibit double counting of collateral.

38. The financial statements shall disclose the following related to high deductible policies:

a. Gross (of high deductible) amount of loss reserves, unpaid by line of business.

b. The amount of reserve credit that has been recorded for high deductibles on unpaid claims and the amounts that have been billed and are recoverable on paid claims, by line of business and the total of these two numbers.

c. Related to the amounts that have been billed and are recoverable on paid claims,

i. paid recoverable amounts that are over 90 days overdue, and

ii. the amounts nonadmitted (per paragraph 37).

d. Total collateral pledged to the reporting entity related to deductible and paid recoverables:

i. the amount of collateral on balance sheet, and

ii. the amount of collateral off balance sheet.

e. The total amount of unsecured high deductible amounts related to unpaid claims and for paid recoverables and the total percentage that is unsecured.

f. Highest ten unsecured high deductible amounts by counterparty ranking. Note that the counterparty does not have to be named, just amount by counterparty 1, counterparty 2,

etc. For this purpose, a group of entities under common control shall be regarded as a single customer.

39. Unsecured High Deductible Recoverables: If the individual obligor is part of a group under the same management or control, such as a professional employer organization (PEO), list the individual obligors, each of its related group members, and the total unsecured aggregate recoverables on high deductible policies for the entire group, which are greater than 1% of capital and surplus. For this purpose, a group of entities under common control shall be regarded as a single customer.

40. Refer to the Preamble for further discussion regarding disclosure requirements.

Asbestos and Environmental Exposures

41. Asbestos exposures are defined as any loss or potential loss (including both first party and third party claims) related directly or indirectly to the manufacture, distribution, installation, use, and abatement of asbestos-containing material, excluding policies specifically written to cover these exposures. Environmental exposures are defined as any loss or potential loss, including third party claims, related directly or indirectly to the remediation of a site arising from past operations or waste disposal. Examples of environmental exposures include but are not limited to chemical waste, hazardous waste treatment, storage and disposal facilities, industrial waste disposal facilities, landfills, superfund sites, toxic waste pits, and underground storage tanks.

42. Reporting entities that are potentially exposed to asbestos and/or environmental claims shall record reserves consistently with SSAP No. 55.

43. The financial statements shall disclose the following if the reporting entity is potentially exposed to asbestos and/or environmental claims:

a. The reserving methodology for both case and IBNR reserves;

b. The amount paid and reserved for losses and loss adjustment expenses for asbestos and/or environmental claims, on a direct, assumed and net of reinsurance basis. Each company should report only its share of a group amount (after applying its respective pooling percentage) if the company is a member of an intercompany pooling agreement;

c. Description of the lines of business written for which there is potential exposure of a liability due to asbestos and/or environmental claims, and the nature of the exposure(s);

d. The following for each of the five most current calendar years[1] on both a gross and net of reinsurance basis, separately for asbestos and environmental losses (including coverage dispute costs):

Beginning reserves	$_____
Incurred losses and loss adjustment expenses	_____
Calendar year payments for losses and loss adjustment expenses	_____
Ending reserves	$_____

[1] The requirement for five years of data is only applicable to the annual statement blank. The audited statutory financial report is only required to report two years. Additionally, the audited statutory financial statement shall include items not included in the notes to the annual statement blank where the blank's schedules and exhibits satisfy disclosure requirements that are not included in the audited statutory financial statement (i.e., Since the audited financial statements do not include Schedule P, all of the SSAP No. 55 disclosures shall be included in the audited notes to financial statements).

44. Refer to the Preamble for further discussion regarding disclosure requirements.

Excess Statutory Reserve

45. This statement eliminates the requirement to record excess statutory reserves. Excess statutory reserves do not meet the definition of a liability established in *SSAP No. 5R—Liabilities, Contingencies and Impairments of Assets.*

Policyholder Dividends

46. Dividends to policyholders immediately become liabilities of the reporting entity when they are declared by the board of directors and shall be recorded as a liability. Incurred policyholder dividends are reported in the statement of income.

47. The financial statements shall disclose the terms of dividend restrictions, if any. Refer to the Preamble for further discussion regarding disclosure requirements.

Relevant Literature

48. Structured settlements are addressed in *FASB Statement No. 113, Accounting and Reporting for Reinsurance of Short-Duration and Long-Duration Contracts* (FAS 113). FAS 113 is addressed in *SSAP No. 62R—Property and Casualty Reinsurance*. This statement rejects the AICPA *Audit and Accounting Guide—Audits of Property and Liability Insurance Companies.*

Effective Date and Transition

49. This statement is effective for years beginning January 1, 2001. To the extent that the requirements of paragraphs 23-33 produce a higher reserve than the reporting entity would have established through the use of their previous methodology, the reporting entity may phase in the additional reserve over a period not to exceed three years. Such a phase in period shall only be permitted if the reporting entity is able to demonstrate that it would not be operating in a hazardous financial condition and that there is not adverse risk to its insureds. The phase in shall be at least 60% of the difference between the reserve required by this statement and the reserve determined by the previous methodology during the first year, 80% in the second year, and 100% in the third year. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with SSAP No. 3. The guidance in the footnote of paragraph 43.d. was originally contained within *INT 02-10: Statutory Audit Report Notes and the Reporting Requirements Related to Discosures Containing Multiple Year Information* and was effective June 9, 2002.

REFERENCES

Other

- *Actuarial Standard of Practice No. 20, Discounting of Property and Casualty Loss and Loss Adjustment Expense*
- NAIC *Annual Statement Instructions for Property and Casualty Insurers*

Relevant Issue Papers

- *Issue Paper No. 65—Property and Casualty Contracts*

EXHIBIT A – GUIDELINES FOR STATES WHO PRESCRIBE OR PERMIT DISCOUNTING ON A NON-TABULAR BASIS

As discussed in paragraph 10 of this statement, with the exception of fixed and reasonably determinable payments such as those emanating from workers' compensation tabular indemnity reserves and long-term disability claims, property and casualty loss reserves shall not be discounted. However, one of the most common prescribed or permitted state practices is to allow discounting of unpaid losses and unpaid loss adjustment expenses on a non-tabular basis. The recommendations in this exhibit are not requirements and therefore should only be viewed as a recommendation to those states that prescribe or permit non-tabular discounting.

Recommended Prescribed or Permitted Practice Guidelines

The state of XYZ office will permit [insert domestic companies if prescribed or insert insurance company name if prescribed] to discount its December 20XX unpaid loss (i.e., reported losses and incurred but not reported losses) and unpaid loss adjustment expense (LAE) reserves on an non-tabular basis subject to the following conditions:

1. The unpaid loss and LAE reserves shall be determined in accordance with *Actuarial Standard of Practice No. 20, Discounting of Property and Casualty Loss and Loss Adjustment Expense* (and as agreed to by an actuary) but in no event shall the rate used exceed the lesser of the following two standards:

   a. If the reporting entity's statutory invested assets are at least equal to the total of all policyholder reserves, the reporting entity's net rate of return on statutory invested assets, less 1.5%, otherwise, the reporting entity's average net portfolio yield rate less 1.5% as indicated by dividing the net investment income earned by the average of the reporting entity's current and prior year total assets; or

   b. The current yield to maturity on a United States Treasury debt instrument with maturities consistent with the expected payout of the liabilities.

2. Disclosure of the [insert either prescribed or permitted practice] in compliance with the requirements of the NAIC *Accounting Practices and Procedures Manual* and the *NAIC Annual Statement Instructions – Property and Casualty*, including but not limited to:

   Note 1 – Summary of Significant Accounting Policies

   A. Disclosure of permitted practice

      a. Disclose that the reporting entity employs a prescribed or permitted accounting practice that departs from the *Accounting Practices and Procedures Manual*; and

      b. Disclose the monetary effect on net income and statutory surplus of using the practice of discounting on a non-tabular basis rather than the NAIC statutory accounting practice of discounting fixed and reasonably determinable payments such as those emanating from workers' compensation tabular indemnity reserves and long-term disability claims.

   Note 32 – Discounting of Liabilities for Unpaid Losses or Unpaid Loss Adjustment Expenses
   XX. Non-tabular discounting

      a. Disclosure of whether the reporting entity is applying non-tabular discounting based upon a state prescribed or permitted practice. If permitted, provide further disclosure as to the date domiciliary state issued permitted practice and the

expiration date of such practice;

b. Rate(s) used and the basis for the rate(s) used;

c. Amount of non-tabular discount disclosed by line of business and reserve category (i.e., unpaid loss, incurred but not reported, defense and cost containment expense, and adjusting and other expense); and

d. The amount of non-tabular discount reported in the statement.

Non-tabular discounting illustration:

	(1) Case	(2) IBNR	(3) Defense & Cost Containment Expense	(4) Adjusting & Other Expense
1. Homeowners/Farmowners				
2. Private Passenger Auto Liability/Medical				
3. Commercial Auto/Truck Liability/Medical				
4. Workers' Compensation				
5. Commercial Multiple Peril				
6. Medical Malpractice – Occurrence				
7. Medical Malpractice – Claims-Made				
8. Special Liability				
9. Other Liability – Occurrence				
10. Other Liability – Claims-Made				
11. Special Property				
12. Auto Physical Damage				
13. Fidelity, Surety				
14. Other (including Credit, Accident & Health)				
15. International				
16. Reinsurance Nonproportional Assumed Property				
17. Reinsurance Nonproportional Assumed Liability				
18. Reinsurance Nonproportional Assumed Financial Lines				
19. Products Liability – Occurrence				
20. Products Liability – Claims-Made				
21. Financial Guaranty/Mortgage Guaranty				
22. Total				

The rates used to discount Medical Malpractice unpaid losses at December 31, 20X2 have changed from the rates used at December 31, 20X1. At December 31, 20X2, the amount of discounted Medical Malpractice unpaid losses, excluding the current accident year, is $_____. Had these unpaid losses been discounted at the rates used at December 31, 20X1 the amount of discounted liabilities would be $_____. The reduction in the discounted liability due to the change in rates is $_____.

This illustration neither regulates, permits, nor prohibits the practice of discounting liabilities for unpaid losses or unpaid loss adjustment expenses.

Statement of Statutory Accounting Principles No. 66

Retrospectively Rated Contracts

STATUS

Type of Issue	Common Area
Issued	Initial Draft
Effective Date	January 1, 2001
Affects	No other pronouncements
Affected by	No other pronouncements
Interpreted by	INT 05-05
Relevant Appendix A Guidance	A-785

SCOPE OF STATEMENT

1. This statement establishes statutory accounting principles for retrospectively rated contracts. This statement applies to property and casualty contracts, life insurance contracts, and accident and health contracts.

2. Retrospective reinsurance contracts are not within the scope of this statement. They are addressed in *SSAP No. 62R—Property and Casualty Reinsurance*.

SUMMARY CONCLUSION

3. A retrospectively rated contract is one which has the final policy premium calculated based on the loss experience of the insured during the term of the policy (including loss development after the term of the policy) and the stipulated formula set forth in the policy or a formula required by law. The periodic adjustments may involve either the payment of return premium to the insured or payment of an additional premium by the insured, or both, depending on experience. Retrospective rating features are common in certain property and casualty contracts, group life, and group accident and health contracts. Some contracts have retrospective features required by law. Contracts with retrospective rating features are referred to as loss sensitive contracts.

4. Amounts due from insureds and amounts due to insureds under retrospectively rated contracts meet the definitions of assets and liabilities as set forth in *SSAP No. 4—Assets and Nonadmitted Assets*

and *SSAP No. 5R—Liabilities, Contingencies and Impairment of Assets*, respectively. Amounts due from insureds and amounts due to insureds under retrospectively rated contracts are admitted assets to the extent they conform to the requirements of this statement.

5. Initial premiums shall be recognized in accordance with *SSAP No. 51R—Life Contracts, SSAP No. 53—Property Casualty Contracts—Premiums,* and *SSAP No. 54R—Individual and Group Accident and Health Contracts*.

6. Specific funds received by the prescription drug plan sponsor from either the Medicare Part D enrollee or the government as payment for standard coverage that will be subject to retrospective premium adjustments should be accounted for under this statement. These funds include 'Direct Subsidy', 'Low Income Subsidy (premium portion)', 'Beneficiary Premium (standard coverage portion)', 'Part D Payment Demonstration' and 'Risk Corridor Payment Adjustment'. The funds noted above have a final policy amount that is calculated based on the loss experience of the insured during the term of the policy, therefore should be treated as such. Refer to *INT 05-05: Accounting for Revenues Under Medicare Part D Coverage* for additional information and definitions of terms specifically related to Medicare Part D business.

7. Because policy periods do not always correspond to reporting periods and because an insured's loss experience may not be known with certainty until sometime after the policy period expires, retrospective premium adjustments shall be estimated based on the experience to date using one of the following methods:

a. Property and Casualty Contracts:

i. Use of actuarially accepted methods in accordance with filed and approved retrospective rating plans. This includes but is not limited to the application of historical ratios of retrospective rated developments to earned standard premium to develop a ratio which is then applied to those policies for which no retrospective calculation has been recorded or for which no modification to the recorded calculation is needed. This method results in the calculation of one amount which is either a net asset or a net liability;

ii. Reviewing each individual retrospectively rated risk, comparing known loss development (including IBNR) with that anticipated in the policy contract to arrive at the best estimate of return or additional premium earned at that point in time. This method results in the calculation of an asset or a liability for each risk. The total of all receivables shall be recorded as an asset and the total of all return premiums shall be recorded as a liability.

b. Life and Accident & Health Contracts: Reporting entities offering group coverage have extensive underwriting procedures and complex individually negotiated benefits and contracts. Due to cost and reporting deadlines, these factors make it difficult to establish an exact valuation of retrospective premium adjustments. The method used to estimate the liability shall be reasonable based on the reporting entity's procedures and consistent among reporting periods. Common methods include a mathematical approach using a complex algorithm of the reporting entity's underwriting rules and experience rating practices, and an aggregate or group approach.

8. Assumptions used in estimating retrospective premium adjustments shall be consistent with the assumptions made in recording other assets and liabilities necessary to reflect the underwriting results of the reporting entity such as claim and loss reserves (including IBNR) and contingent commissions. Contingent commissions and other related expenses shall be adjusted in the same period the additional or return retrospective premiums are recorded.

9. Retrospective premium adjustments are estimated for the portion of the policy period that has expired and shall be considered an immediate adjustment to premium. Additional retrospective premiums and return retrospective premiums shall be recorded as follows:

a. Property and Casualty Reporting Entities:

i. Accrued additional retrospective premiums shall be recorded as a receivable with a corresponding entry made either to written premiums or as an adjustment to earned premiums. Premiums not recorded through written premium when accrued shall be recorded through written premium when billed;

ii. Accrued return retrospective premiums shall be recorded as part of the change in unearned premium (detailed in the underwriting and investment exhibit) liability with a corresponding entry made either to written premiums or as an adjustment to earned premiums. Premiums not recorded through written premium when accrued shall be recorded through written premium when billed;

iii. Ceded retrospective premium balances payable shall be recorded as liabilities, consistent with SSAP No. 62R. Ceded retrospective premiums recoverable shall be recorded as an asset. Consistent with *SSAP No. 64—Offsetting and Netting of Assets and Liabilities*, ceded retrospective premium balances payable may be deducted from ceded retrospective premiums recoverable when a legal right of setoff exists.

b. Life and Accident and Health Reporting Entities:

i. Accrued additional retrospective premiums shall be recorded as an asset, accrued retrospective premiums, with a corresponding entry to premiums;

ii. Accrued return retrospective premiums shall be recorded as a liability, provision for experience rating refunds, with a corresponding entry to premiums.

c. Managed Care/Accident and Health Reporting Entities

i. Accrued additional retrospective premiums shall be recorded as an asset, accrued retrospective premiums with a corresponding entry to premiums;

ii. Accrued return retrospective premiums shall be recorded as a liability, as part of Accident and Health Reserves (reserve for rate credits or experience rating refunds), with a corresponding entry to premiums.

10. The amount of accrued estimated retrospective premiums to be recorded as a nonadmitted asset for property and casualty insurers shall be determined as follows:

a. 100% of the amount recoverable from any person for whom any agents' balances or uncollected premiums are classified as nonadmitted, and item (b), plus item (c) or (d) below. Once an insurer has elected either (c) or (d) below, a change from one to the other requires approval from the insurer's domiciliary state and such change must be disclosed in the financial statements.

b. Retrospective premium adjustments shall be determined and billed or refunded in accordance with the policy provisions or contract provisions. If accrued additional retrospective premiums are not billed in accordance with the policy provisions or contract provisions, the accrual shall be nonadmitted.

c. 10% of any accrued retrospective premiums not offset by retrospective return premiums, other liabilities to the same party (other than loss and loss adjustment expense reserves), or collateral, not otherwise used. Collateral shall be of the same types and quality permitted for use in connection with reinsurance (types of acceptable collateral vary from state to state) or by financial guaranty coverage issued by an insurer having an "A" or better rating from a nationally recognized rating agency. The financial guaranty coverage must allow the insured under the financial guaranty policy the same degree of access to payments under that policy as a beneficiary has under a qualified letter of credit as described in Appendix A-785. Accrued retrospectively rated premiums relating to bulk IBNR must be allocated to individual policyholder accounts prior to applying collateral by account. If the insurer is unable to allocate amounts by account, no credit may be taken for collateral.

d. An amount calculated using the factors below for accrued retrospective premiums not offset by retrospective return premiums, other liabilities to the same party (other than loss and loss expense reserves), or collateral, not otherwise used. Collateral shall be of the same types and quality permitted for use in connection with reinsurance (types of acceptable collateral vary from state to state) or by financial guaranty coverage issued by an insurer having an "A" or better rating from a nationally recognized rating agency. The financial guaranty coverage must allow the insured under the financial guaranty policy the same degree of access to payments under that policy as a beneficiary has under a qualified letter of credit as described in Appendix A-785.

Accrued retrospectively rated premiums relating to bulk IBNR must be allocated to individual policyholder accounts prior to categorizing by Quality Rating.

Insured's Current Quality Rating*	Insured's Corporate Debt Equivalent to (S&P/Moody's)**	Percentage of Retro Premium to be Nonadmitted***
1	AAA, AA, A/Aaa, Aa, A	1%
2	BBB/Baa	2%
3	BB/Ba	5%
4	B/B	10%
5	CCC, CC, C/Caa, Ca	20%
6	CI, D/C, or insured in default on debt service payments, or insured's debt service payments are jeopardized upon filing of a bankruptcy petition	100%

* The Percentage of Retro Premium to be Nonadmitted is based upon the Insured's Current Quality Rating (i.e., if an insured's quality rating drops, the percentage relating to the lower quality rating is used in calculating the amount to be nonadmitted and vice versa).

** Insureds that do not have a debt rating issued by a publicly recognized rating agency are required to be rated by the NAIC's Securities Valuation Office (SVO).

*** In the event the insured has no debt rating (either from a publicly recognized rating agency or from the SVO) the insured's quality rating will be considered category 5 for purposes of this calculation (i.e., a factor of 20% shall be applied), unless the

insurer is aware of conditions of the insured that would warrant a category 6 classification (i.e., a factor of 100%).

11. Once accrued retrospective premium is billed, the due date is governed by *SSAP No. 6—Uncollected Premium Balances, Bills Receivable for Premiums, and Amounts Due From Agents and Brokers*. Life and accident and health reporting entities shall nonadmit any accrued retrospective premium that is more than 90 days due. If a reporting entity has issued more than one policy to the same insured, retrospective balances shall be netted in accordance with SSAP No. 64.

12. If, in accordance with SSAP No. 5R, it is probable that the additional retrospective premium is uncollectible, any uncollectible additional retrospective premium shall be written off against operations in the period the determination is made. If it is reasonably possible a portion of the balance in excess of the nonadmitted portion determined in accordance with paragraph 10 is not anticipated to be collected, the disclosure requirements outlined in SSAP No. 5R shall be made.

Disclosures

13. The financial statements shall disclose the method used by the reporting entity to estimate retrospective premium adjustments. The amount of net premiums written that are subject to retrospective rating features, as well as the corresponding percentage to total net premiums written, shall be disclosed. In addition, disclose whether accrued retrospective premiums are recorded through written premium or as an adjustment to earned premium.

14. The financial statements shall disclose the calculation of nonadmitted retrospective premium. If a reporting entity chooses treatment described in paragraph 10.c. or 10.d., the appropriate exhibit must be included in the Notes to Financial Statements in the annual statement. Once a reporting entity has elected either 10.c. or 10.d., a change from one to the other requires approval from the reporting entity's domiciliary state and such change must be disclosed in the financial statements.

15. The financial statements shall disclose the following amounts for medical loss ratio rebates required pursuant to the Public Health Service Act for the current reporting period year-to-date and prior reporting period year: incurred rebates, amounts paid and unpaid liabilities segregated into the following categories: individual, small group employer, large group employer and other. In addition, the impact of reinsurance assumed, ceded and net on the total medical loss ratio rebate shall be disclosed.

16. Refer to the Preamble for further discussion of the disclosure requirements.

Relevant Literature

17. This statement rejects *FASB Emerging Issues Task Force No. 93-14, Accounting for Multiple Year Retrospectively Rated Insurance Contracts* (EITF 93-14) since it applies only to multiple-year retrospectively rated contracts. The statutory principles outlined in the conclusion above are consistent with the guidance provided for accounting and retrospectively rated contracts in *FASB Statement No. 60, Accounting and Reporting by Insurance Companies* (FAS 60) and EITF 93-14, with the exception of the requirement to record certain amounts as nonadmitted. Although FAS 60 is rejected in *SSAP No. 50—Classifications of Insurance or Managed Care Contracts* and EITF 93-14 is rejected in this statement, it is considered appropriate that the accounting for retrospectively rated contracts be consistent with those provisions of both FAS 60 and EITF 93-14 as they are consistent with the Statement of Concepts.

Effective Date and Transition

18. This statement is effective for years beginning January 1, 2001. A change resulting from the adoption of this statement shall be accounted for as a change in accounting principle in accordance with *SSAP No. 3—Accounting Changes and Corrections of Errors*.

REFERENCES

Other

- NAIC *Annual Statement Instructions for Property and Casualty Insurance Companies*

Relevant Issue Papers

- *Issue Paper No. 66—Accounting for Retrospectively Rated Contracts*

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Due to file restrictions, please use the following link to access the files:

Feldblum, S., "**Rating Agencies**," CAS Study Note, October 3, 2011, pp. 1-7 and 14-15 (stop at Best's Capital Adequacy Ratio) and Appendix A. Candidates are not responsible for Section 4, Section 5 beginning at Best's Capital Adequacy Ratio on p. 15, Appendices B-D, and the endnotes.

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Statutory Surplus:
Computation, Pricing, and Valuation

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(Fifth Edition: June 2003)

Casualty Actuarial Society Exam 7 Study Note

Statutory Surplus:
Computation, Pricing, and Valuation

The development of financial pricing models for insurance products and the advent of risk-based capital requirements have led to an increasing focus on capital. This study note explains the differences between statutory surplus and invested capital and the implications for actuarial pricing and valuations.

When insurance products were priced to a 5% underwriting profit margin, some states mandated that investment income be considered, often by simple *investment income offset* procedures that reduced the underwriting profit margin for the investment income earned on policyholder supplied funds.[1] These procedures did not consider capital or surplus.

Insurers are now using *return on capital* models, for pricing and performance measurement. The pricing models vary in their definitions of *capital*, whether statutory surplus, GAAP equity, economic surplus, or invested capital. Similarly, actuarial valuations may use GAAP earnings, statutory earnings, or cash flows. The valuation results differ sharply, and proper valuation relies on an accurate assessment of the capital supporting insurance operations.

The idiosyncracies of statutory accounting complicate the relation between statutory surplus and invested capital. For example, the statutory income statement shows *net income* earned during the current year. One might suppose that last year's surplus plus this year's net income should equal this year's surplus, but there are half a dozen other adjustments, such as the *change in non-admitted assets* or the *change in the provision for reinsurance*, which are *direct charges or credits* to surplus. In contrast, the surplus figure on the balance sheet is total assets minus total liabilities, with no adjustment for *direct charges or credits to surplus*. The sign of the income statement adjustments is also confusing, since an increase in non-admitted assets causes a decrease in policyholders' surplus. Some readers wonder: "Why should an increase in assets, of whatever sort, lead to a decrease in the worth of the company?"

This study note traces the computation of statutory surplus, along with the difference from GAAP equity; contrasts statutory surplus (and GAAP equity) with invested capital; and adds the capital in the policyholder reserves with the capital required by statutory regulations to determine the capital supporting the insurance policy.[2]

Balance Sheets and Income Statements

Surplus has two definitions. The balance sheet definition says *surplus = assets – liabilities*. The income statement definition says *surplus = last year's surplus + current year's income*.

If all balance sheet transactions also flowed through the income statement, and if all income

statement transactions had corresponding effects on statutory assets and liabilities, the two definitions of surplus would be equivalent, and no adjustments would be needed.

Illustration: Suppose an insurer begins the year with $2,000 in surplus and $2,000 in cash, and it writes a policy for a $1,000 premium on January 1. An insurer normally hold marketable securities, not cash; we use cash in this illustration to avoid the accounting entries for investment income. The insurer incurs expenses of $250 and losses of $600 during the year.

Statutory accounting is on an accrual basis, not a cash basis. It makes no difference whether the premium has been collected or is still owed the company (so long as the receivable is admitted) and no difference whether the losses are paid or held as reserves. Let us suppose the premium is collected on January 1, expenses are paid during the year, $200 of losses are paid by December 31, and $400 of losses remain in reserves.

During the year, the cash account increases by the $1,000 premium and decreases by the $250 of expenses and the $200 of paid losses, for a net increase of $550. At the end of the year, the cash account has the original $2,000 plus the year's increase of $550, for a total of $2,550. Liabilities, which were $0 at the beginning of the year, increase by the $400 case reserves. Surplus at year end is $2,150, or the $2,550 of assets minus the $400 of liabilities.

From an income statement perspective, premium earned is a revenue, and losses incurred and underwriting expenses are expenditures.[3] Net income = revenues minus expenditures = $1,000 – $600 – $250 = $150 is the addition to surplus during the year.

At the year end, income statement surplus has increased by $150 (revenues – expenditures). Balance sheet surplus of $2,150 equals total assets ($2,550) minus total liabilities ($400).

Activity	*Accounting Entry*	*Account*	*Debit*	*Credit*
	Cash	Asset	$2,000	
	Policyholders'	Surplus		$2,000
Write Policy	Cash	Asset	$1,000	
	Unearned Premium	Liability		$1,000
Incur Expenses	Expenses incurred	Expenditure	$250	
	Cash	Asset		$250
Incur Losses	Losses Incurred	Expenditure	$600	
	Cash	Asset		$200
	Loss Reserve	Liability		$400
Non-Ledger	Unearned Premium	Liability	$1,000	
	Premiums Earned	Revenue		$1,000

In the accounting presentation above, ledger transactions are entered onto an accounting ledger; year end adjustments are non-ledger items.

The balance sheet and income statement definitions of surplus are not the same if some balance sheet transactions do not flow through the income statement. Nonadmitted assets and statutory liabilities affect the balance sheet; the income statement does not differentiate between admitted and non-admitted assets, it is not affected by statutory liabilities.

NON-ADMITTED ASSETS

If $100 of premium remains uncollected and more than 90 days pas t due on December 31, it is not admitted. The income statement entries remain earned premium ($1,000), incurred losses ($600), and expenses ($250), for a net income of $150. The income statement surplus, before any adjustments, would be last year's surplus of $2,000 plus the net income of $150.

The balance sheet recognizes only the admitted portion of assets. The premium collected of $900 increases cash by $900. The remaining $100 of earned premium appears as *premiums and agents' balances in course of collection* (page 2, line 10.1). Since it is overdue, it appears in column 2, *Assets Not Admitted*, and it does not enter into balance sheet surplus. The balance sheet calculation of policyholders' surplus is as follows:

At the beginning of the year, *cash on hand or on deposit* is $2,000. We add to the cash account the collected premium of $900 and subtract expenses paid of $250 and losses paid of $200 to *get cash on hand or on deposit* of $2,450 at the end of the year. The $100 of uncollected premium more than 90 days past due is not admitted and does not appear in the *net admitted assets* column of the statutory balance sheet. The liability side of the balance sheet shows the case reserve of $400 and surplus of $2,450 – $400 = $2,050.

THE ASSET EXHIBIT

To reconcile income statement surplus with balance sheet surplus, we adjust income statement surplus for transactions and statutory accounts that do not *flow through the income statement.* Exhibit 1, "Analysis of Non-Admitted Assets and Related Items" (page 13 of the Annual Statement) shows the *change in nonadmitted assets during the year*, which is the needed adjustment to the income statement surplus.

Why do we want the *change* in non-admitted assets instead of the non-admitted asset itself? And why does an *increase* in non-admitted assets lead to a *decrease* in surplus?

Consider again the illustration above. Earned premium during the year is $1,000. But the $1200 of premium receivable at year end is not admitted, since it is more than 90 days past due. The *increase* in non-admitted assets during the year, from $0 to $100, really means a

decrease in the admitted portion of the assets.

Do not think of this as a fixed admitted asset to which is tacked on a non-admitted asset. Rather, conceive of the *total* asset as a *fixed* amount, so an *increase* in the non-admitted portion is a *decrease* in the admitted portion. The earned premium on the income statement is an increase in total assets. If total assets increase during the statement year by $1,000, and non-admitted assets increase by $100, then admitted assets increase by only $900.

The income statement shows revenues, which correspond to the increase in *total* assets. *Subtracting* the increase in non-admitted assets gives the increase in admitted assets. The increase in non-admitted assets is a direct charge to policyholders' surplus.

The Statutory Balance Sheet

The statutory balance sheet uses four columns to reconcile with the income statement.

- Column 1: (Total) assets
- Column 2: Assets not admitted
- Column 3: Net admitted assets (Columns 1 – 2)
- Column 4: Net admitted assets (prior year)

Agents' balances are in column 1. The portion more than 90 days past due is recorded in column 2 and the difference is the net admitted asset in column 3. The change in the non-admitted asset appears in Exhibit 1, Analysis of Non-Admitted Assets and Related Items:

- Column 1: Non-admitted assets at the end of the current year
- Column 2: Non-admitted assets at the end of the previous year
- Column 3: Change for year (increase) or decrease, or column 2 – Column 1.

A positive entry in column 3 means a *decrease* in non-admitted assets, and a negative entry in column 3 means an *increase* in non-admitted assets.

Surplus Adjustments

An increase in non-admitted assets, given fixed total assets, is a decrease in net admitted assets; the negative entry in column 3 of Exhibit 1 is carried to page 4 and reduces surplus. A decrease in non-admitted assets is an increase in net admitted assets; the positive figure in column 3 of Exhibit 1 increases surplus on page 4.

The non-admitted assets in Exhibit 1 include only the assets on lines 10-17 and 19-21 of the balance sheet plus certain other assets: (i) bills receivable, past due, taken for premium, (ii) furniture and equipment, and (iii) loans on personal security. Exhibit 1 does not include the non-admitted portions of financial assets (lines 1-9 of the balance sheet), or the *excess of*

book over market (or amortized) values. The *change* in the excess of book over market from one year to the next is the unrealized capital gain or loss. The *net unrealized capital gains or losses* are shown as a separate adjustment to surplus page 4.

OFFICE FURNITURE

We show several examples of entries peculiar to statutory accounting. Insurers have two statutory accounting options for non-admitted assets.

- Method 1: Write off the non-admitted asset as an expense in the income statement.
- Method 2: Use GAAP entries for the balance sheet and the income statement, but classify the asset an non-admitted with a direct charge to surplus.

Suppose an insurer buys office furniture on December 31, 20X4, with a useful life of 10 years for $100,000; the insurer uses straight line depreciation. The 20X4 GAAP entries are:

- Credit cash by $100,000 (cash paid to purchase furniture).
- Debit an office furniture asset by $100,000.

Both entries are on the balance sheet, and there is no effect on GAAP equity. These are ledger entries; the purchase of the furniture is shown on the accountant's ledger.

For statutory financial statements, the Method 1 accounting entries are

- Credit cash by $100,000 (cash paid to purchase furniture).
- Debit general expenses (income statement) by $100,000.

The entries are on different financial statements, and statutory surplus declines by $100,000.

The Method 2 accounting transactions are

- Credit cash by $100,000 (cash paid to purchase furniture).
- Debit an office furniture asset by $100,000.
- Enter $100,000 in the non-admitted column for the office furniture asset.
- The non-admitted assets increase from $0 before the purchase of the furniture to $100,000 after the purchase of the furniture. The change in non-admitted assets of +$100,000 is a direct charge to surplus.

The year-end 20X5 GAAP non-ledger entries are

- Credit the office furniture asset by $10,000 to reflect depreciation.
- Debit depreciation expense (income statement) by $10,000.

For statutory accounting, if Method 1 is used for the initial purchase, there are no accounting transactions in subsequent years; the full $100,000 was an expense in 20X4. The Method 2 accounting transactions are

- Credit the office furniture asset by $10,000 to reflect depreciation.
- Debit depreciation expense by $10,000.

The non-admitted office furniture declines from $100,000 to $90,000. The –$10,000 change in non-admitted assets is a credit to surplus, offsetting the debit from the income statement.

GAAP depreciates the office furniture by $10,000 each year to match revenue and expenses. Statutory Method 1 says that the office furniture has little or no realizable value. It can not be used to pay claims, so its entire value is written off when it is purchased.

Method 1 requires two sets of books: one for GAAP and one for statutory accounting. This complicates the accounting, and it may lead to errors. Method 2 uses GAAP books only, but it non-admits certain assets. The income statement entries are the same as for GAAP statements; any changes needed are made by direct charges and credits to surplus.

ACCRUED RETROSPECTIVE PREMIUMS

Accrued retrospective premiums are taken from the Underwriting and Investment Exhibit, "Recapitulation of All Premiums," page 8, Part 2A, column 5, line 33, "accrued retrospective premiums based on experience," and entered on page 2, line 10.3, column 1. The non-admitted portion (usually 10% of the unsecured portion) is entered in column 2 and the difference is entered in column 3.

STATUTORY LIABILITIES: PROVISION FOR REINSURANCE

Any transaction that affects the balance sheet but not the income statement is a direct charge or credit to surplus. For instance, an increase in the Schedule F provision for reinsurance does not flow through the income statement but it increases liabilities on the balance sheet, thereby decreasing balance sheet surplus. The increase (decrease) in the provision for reinsurance from the previous year to the current year is a direct charge (credit) to surplus.

Illustration: Suppose an insurer has a 50% pro-rata reinsurance treaty with an authorized reinsurer. A loss occurs on March 1 and a direct case reserve of $200,000 is posted. On June 1, the loss is paid for $300,000. At year end, the reinsurance recovery has not been collected and it is more than 90 days past due. The financial statement entries are

March 1: Debit incurred losses $200,000 (direct loss, income statement)
Credit incurred losses $100,000 (reinsurance recoverable, income statement)
Credit case reserve $200,000 (direct loss, balance sheet)

Debit case reserve $100,000 (reinsurance recoverable, balance sheet)

June 1: Debit incurred losses $100,000 (direct loss, income statement)
Credit incurred losses $50,000 (reinsurance recoverable, income statement)
Debit case reserve $200,000 (direct loss, balance sheet)
Credit case reserve $100,000 (reinsurance recoverable, balance sheet)
Credit cash $300,000 (direct loss, balance sheet)
Debit reinsurance recoverable $150,000 (balance sheet)

Dec 31: Credit provision for reinsurance $30,000 (balance sheet)
Change in provision for reinsurance $30,000 (direct charge to surplus)

UNREALIZED CAPITAL GAINS

Unrealized capital gains are direct credits to surplus. Suppose that on December 31, 20X4, an insurer has $100 million of assets, $60 million of liabilities, and surplus of $40 million. The assets are 80% bonds and 20% common stock. In 20X5, the stocks increase in value to $30 million. The federal income tax rate is 35%. The 20X5 financial statement entries are

- Debit stocks $10 million (balance sheet)
- Credit deferred tax liability $3.5 million (balance sheet)
- Unrealized capital gains of $10 million (direct credit to surplus)
- Change in deferred tax liability of $3.5 million (direct charge to surplus)

AUDIT PREMIUMS

We show the accounting entries for a $10,000 policy written on October 1, 20X3, with an estimated audit premium of $2,000. The estimated earned premium for the full policy term is $12,000, of which the 20X3 portion is $3,000. Estimates of audit premiums may be included as written premium or as a separate adjustment to earned premium. The accounting entries on 12/31/20X3 are either

- written premium of $12,000 and an UEPR of $9,000 or
- written premium of $10,000 and an UEPR of $7,000.

DEFERRED POLICY ACQUISITION COST AND PREMIUM DEFICIENCY RESERVE

Suppose an insurer writes a block of policies with written premium of $100 on July 1, 20X4. Acquisition costs are $20 million and expected losses are $80 million; investment income covers other expenses. GAAP recognizes the premium and the expenses over the term of the policy by setting up both an unearned premium reserve and a DPAC (deferred policy acquisition cost) asset and amortizing them over the policy term. On December 31, the remaining UEPR is $50 million and the remaining DPAC is $10 million, for a net reserve of

$40 million. We show the GAAP and statutory accounting entries for two scenarios:

If by December 31, 20X4, incurred losses are $45 million, and the insurer expects another $45 million of incurred losses in the next six months, the DPAC is reduced to $5 million, and expenses are debited by $5 million on the income statement. Statutory has no DPAC, so no accounting entries are needed

If by December 31, 20X4, incurred losses are $65 million, and the insurer expects another $45 million of incurred losses in the next six months, the DPAC is reduced to zero, and a premium deficiency reserve of $15 million is set up on both GAAP and statutory statements.

INTEREST DUE AND ACCRUED

Suppose an insurer buys $100 million of investment grade 6% coupon bonds on March 1, 20X4, and classifies them as available for sale (FAS 115). By December 31, 20X4, interest rates have declined and the market value of the bonds is $102 million. In 20X5, the issuer fails to pay the August 31 coupon, and the bonds are downgraded to class 4. On December 31, 20X5, the market value of the bonds is $90 million; the August 31 coupon is still not paid, but the company expects to collect it next month. We show the accounting entries.

20X4: The cash received of $3 million and the accrued interest of $2 million are revenues (credits) on the income statement and debits to cash and to interest receivable on the balance sheet. On the GAAP balance sheet, the bonds are marked to market ($102 million). The $2 million increase is a direct credit to equity; it does not flow through the income statement. On the statutory balance sheet, the bonds remain at (amortized) cost of $100 million.

20X5: The cash received on February 28 of $3 million and the accrued interest of –$2 million are revenues on the income statement and debits to cash and interest receivable on the balance sheet. By year-end, the bond has been downgraded to Class 4, and it is shown at market value on both GAAP and statutory financial statements. GAAP shows a $12 million charge to equity, and statutory accounting shows a $10 million charge to surplus.

GAAP shows $3 million as interest receivable and $2 million as interest due and accrued; the full $5 million flows through the income statement. Statutory accounting does not admit any of the interest, since the payments is more than 90 days past due. Method 1 shows no balance sheet or income statement entries. Method 2 shows the same entries as GAAP and then classifies the assets as non-admitted and have a $5 million direct charge to surplus.

REAL ESTATE

On December 31, 20X4, an insurer buys a shopping mall for $50 million as a real estate investment. Rental income is $8 million a year, and depreciation is $2 million a year for 25 years. On December 31, 20X5, the market value of the mall has increased to $53 million. In

20X6, a competing shopping mall opens 4 miles away, and by December 31, 20X6, the market value of the insurer's shopping mall is $43 million.

- *2004:* Cash is credited $50 million and investment real estate is debited $50 million; there is no change in surplus.
- *2005:* Rental income flows through the income statement at investment income ($8 million credit) and cash is debited $8 million. Depreciation expense is debited $2 million (income statement), and investment real estate is credited &2 million. No entry is made for the increase in market value.
- *2006:* The rental income and depreciation entries are the same as for 2005. The book value of the real estate is $46 million, of which $3 million is not admitted (excess of book over market value), and there is a $3 million direct charge to surplus.

STOCKHOLDER DIVIDENDS AND CAPITAL CONTRIBUTIONS

An insurer begins the year with $100 of 8% coupon bonds maturing on December 31 in five years. The tax rate is 35%, and taxes are paid when cash is received. The insurer remits the after-tax investment income to its shareholders. On December 31, the insurer sells an additional one million shares of common stock, with a par value of $1 per share and a sale price of $1.50 per share. We show the accounting entries.

On June 30, the insurer receives $4 million of bond interest: $4 million × 35% = $1.4 million is paid to the Treasury and $2.6 million are shareholder dividends; the same transactions occur on December 31. The accounting entries on each date are

- Debit cash $4 million (balance sheet)
- Credit investment income $4 million (income statement)
- Credit cash $1.4 million (balance sheet)
- Debit tax liability $1.4 million (income statement)
- Credit cash $2.6 million (balance sheet)
- Shareholder dividend $2.6 million (direct charge to surplus)

The accounting entries for the common stock issue are

- Debit cash $1.5 million (balance sheet)
- Credit common capital stock $1 million for par value of common stock (balance sheet)
- Credit paid-in and contributed surplus $0.5 million for excess of sale price over par value (balance sheet)
- Direct credits to surplus: $1 million for capital paid in and $0.5 million for surplus paid in.

Statutory Surplus, GAAP Equity, and Capital Invested

A misconception that is sometimes heard in actuarial circles runs as follows: For statutory accounting purposes, we must understand the computation of statutory surplus. In some states, we might need surplus amounts for rate filings as well. For actuarial pricing of insurance products, however, we may dispense with statutory numbers. We seek a return on the economic capital needed to support the insurance operations. We determine this capital by actuarial techniques such as probabilities of ruin or expected policyholder deficits.

Many years ago, actuaries priced products to achieve a pre-set underwriting profit margin, such as 5% for most lines or 2.5% for workers' compensation. This pricing technique did not allow a comparison of insurance profitability with profitability in other industries. An early attempt by Arthur D. Little to examine insurance profitability looked at the return on assets (ROA), or the income during the year divided by the assets held by the insurance company.

The return on assets supposedly shows how efficiently insurers are using their assets to produce insurance policies, just as the ROA for an auto manufacturer shows how efficiently it uses its assets to produce automobiles. But insurers do not use their assets to produce insurance policies. An insurer might invest its money in the bonds issued by an automobile manufacturer; the assets represented by these bonds are used to manufacture automobiles, not automobile insurance policies.

Some financial analysts apply return on equity measures to insurance, looking at the ratio of GAAP income to GAAP equity. Ferrari [1967] examines the calendar year profitability of the insurance industry. Pricing actuaries, concerned with prospective ratemaking, look at *benchmark equity* or *benchmark surplus*: the equity or surplus needed to support the insurance operations, not the equity or surplus currently held by the company or by the industry.

In other industries, the return on equity is a proxy for the return on invested capital. For property-casualty insurance, GAAP equity is not the same as invested capital. Invested capital is statutory surplus plus the capital embedded in gross unearned premium reserve and full value loss reserves. The invested capital implied by statutory surplus is the crux of financial pricing and valuation.

Double Taxation

The valuation of an insurance company requires an adjustment for the cost of holding capital. The cost of holding capital is at least the cost of double taxation (Myers and Cohn [1987]) and perhaps as high as the difference between the cost of equity capital and the after-tax investment yield (Atkinson and Dallas [2000]).[4]

Suppose investors must contribute $100 million to support the writing of insurance policies, and this capital is invested in 10% coupon taxable bonds. If they invest the capital themselves,

the investors pay personal income taxes on the $10 million return. If the insurer makes the same investment, it pays $3.5 million of corporate income taxes and remits the remaining investment income to the investors, who pay personal income taxes on this dividend. The cost of double taxation is the difference in the taxes incurred between direct and indirect investment of capital.[5]

- The taxes paid on direct investment of capital = *investment yield × personal tax rate.*
- The taxes paid on investment of capital through an insurance company = *investment yield × [corporate tax rate + (1 – corporate tax rate) × personal tax rate]*
- The difference between these two is *investment yield × [corporate tax rate + (1 – corporate tax rate) × personal tax rate – personal tax rate] = investment yield × corporate tax rate × (1 – personal tax rate)*

If the investment yield is 10%, the corporate tax rate is 35%, and the average personal tax rate is 30%, the cost of holding capital is *10% × [35% + (1 – 35%) × 30% – 30%] = 10% × 35% × (1 – 30%) = 2.45%.* The investors pay an additional 2.45% of the yield on their capital to the taxing authorities. This is the *after-tax* loss to the investors. The loss before personal income taxes is the investment yield × the corporate tax rate or 10% × 35% = 3.5%. To induce investors to fund the insurance operations, the 3.5% of lost yield must be paid by the policyholders, not the investors.[6]

If the policyholders paid this money directly to the investors, this would be the full cost of holding capital. But there are no direct transactions between policyholders and investors. The policyholders pay this money as part of the policy premium, and the insurer remits the money to the investors. This introduces another layer of tax, since the policy premium is pre-tax and the compensation to the investors is post-tax. The needed margin in the policy premium, as a percentage of the investment yield on investor supplied capital, is

investment yield × corporate tax rate / (1 – corporate tax rate) = investment yield × 35% / (1 – 35%) = investment yield × 53.85%[7]

The double taxation affects invested capital, whereas the money paid by policyholders is a margin on premium. The needed margin is *capital × investment yield × 53.85% / premium.* If the premium is paid at policy inception and the taxes are paid (on average) at mid-year, the needed margin is *capital × investment yield × 53.85% / [premium×(1+investment yield)^{½}].*

Atkinson and Dallas [2000] define the cost of holding capital as the difference between the cost of equity capital and the after-tax investment yield of the insurance company. To illustrate, suppose the cost of equity capital is 12% per annum, but the insurance enterprise invests in 8% Treasury securities. The cost of double taxation is 35% × 8% = 2.8%. The additional cost stemming from the conservative investments of the insurance company is 12% – 8% = 4%, and the total cost of holding capital is 2.8% + 4% = 6.8%. This is the amount that policyholders must pay to the investors to induce them to fund the insurance operations. Since the

policyholders pay this money indirectly through the profit margin in the premium, which is taxed as underwriting income, the additional premium is 6.8% / (1–35%) = 10.46%. If the premium is paid at policy inception and the taxes are paid (on average) at mid-year, the profit margin is 10.46% / $1.08^{½}$ = 10.07%.

This implies that with an 8% investment yield and a 400 basis point spread between the target return on capital and the investment yield, the policyholders pay 10% of investor supplied capital to compensate for the indirect investment of their funds. The needed underwriting profit margin to be combined with expenses and discounted losses is 10% divided by the premium to capital ratio. If discounted losses and fixed expenses are $2,800, the variable expense ratio is 22%, and the premium to capital ratio is 1.25, the needed underwriting profit margin is 10% / 1.2 = 8%, and the indicated premium is $2,800 / (1 – 22% – 8%) = $4,000.

The cost of holding capital depends on both the capital explicitly held as surplus and the capital embedded in statutory reserves. We illustrate the cost of double taxation both with and without consideration of deferred tax assets:

An insurer operates at a two to one premium to surplus ratio. Each year, written premium is $200 million, the unearned premium reserve is $100 million, the pre-paid acquisition expense ratio is 25% of written premium, and the undiscounted loss reserves are $300 million. The risk-free interest rate is 5% per annum and the company's investment yield is 8% per annum. The IRS loss reserve discount factor is 80% for all years and all valuation dates (and the tax basis reserves are at fair value), and 25% of held reserves are paid out during the next year.

If deferred tax assets are not considered, the invested capital is $100 million of surplus + 25% × $100 million = $25 million of equity in the unearned premium reserve + (1 – 80%) × $300 million = $60 million in the undiscounted loss reserves, for a total of $185 million. The cost of double taxation using the Myers' Theorem is $185 million × 5% × 35% = $3.24 million. The cost of double taxation using the company's investment yield is $185 million × 8% × 35% = $5.18 million. The Atkinson and Dallas cost of holding capital is $185 million × 6.8% = $12.58 million.

The statutory deferred tax asset stemming from revenue offset is 35% × 20% × the unearned premium reserve = 35% × 20% × $100 million = $7 million. The statutory deferred tax asset stemming from loss reserve discounting is 35% × the reserve discount that is expected to reverse in the next 12 months, or 35% × 25% × 20% × $300 million = $5.25 million.

The invested capital is $185 million – $7 million – $5.25 million = $172.75 million. The cost of double taxation using the Myers' Theorem is $172.75 million × 5% × 35% = $3.02 million. The cost of double taxation using the investment yield of the company is $172.75 million × 8% × 35% = $4.84 million. The Atkinson and Dallas cost of holding capital is $172.75 million × 6.8% = $11.75 million.

Valuation: Cost of Holding Capital:

We continue the illustration to show the valuation of the company. The insurer has $100 million of surplus of which $12.25 million are deferred tax assets; $200 million of written premium each year, $100 million of unearned premium reserves, and $300 million of undiscounted loss reserves. The cost of equity capital is 12% per annum, and the tax rate is 35%. The pre-paid acquisition expense ratio is 25% of written premium, and the discount factor for loss reserves is 80%. After-tax net income is remitted to shareholders.

The invested capital is $100 million (surplus) + 25% × $200 million (equity in UEPR) + 20% × $300 (equity in undiscounted loss reserves) – $12.25 (DTA) = $172.75 million.

If the insurer expects to earn $36 million of pre-tax income each year, the after-tax net income is $36 million × (1 – 35%) = $23.40 million. The present value of the future net income is $23.4 million / 12% = $195 million. The company is profitable; its net worth is $195 million.

If the insurer expects to earn $30 million of pre-tax income each year, the after-tax net income is $30 million × (1 – 35%) = $19.5 million. The present value of the future net income is $19.5 million / 12% = $162.50 million. The company is not profitable; the shareholders would gain by liquidating the company and taking the $172.75 million. If the costs of liquidation are more than $172.75 – $162.50 = $10.25 million, the company should continue operating.

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Statutory surplus and GAAP equity of property-casualty insurance companies differ from invested capital. For pricing insurance products of valuing an insurance company, actuaries must be careful to include all capital in their analyses. This requires a complete understanding of statutory accounting, with particular emphasis on direct charges and credits to surplus.

Endnotes:

[1] See Robbin, "The Underwriting Profit Provision" [1992], algorithms 1 and 2.

[2] The capital invested in reserves is sometimes larger than the capital explicitly held as statutory surplus.

[3] We use the term *expenditures*, to avoid confusion with underwriting expenses; accountants say *expenses.*

[4] Cf the AAA Standard of Practice on Valuations. Sturgis [1981] takes the view of Atkinson and Dallas, but he leaves out the cost of double taxation; this is an inadvertent omission, not a difference of opinion. Miccolis, commenting on Sturgis, notes that Sturgis ignore risks; Miccolis [1987] follows Myers and Cohn, though he also omits the cost of double taxation.

[5] The cost of double taxation may change with the 2003 tax amendments now before the Congress.

[6] Myers asserts that the cost of double taxation is the same regardless of the investment portfolio of the insurer. If the cost of double taxation is $20 million if the insurer holds Treasury securities, the cost of double taxation is $20 million even if the insurer holds risky securities with a higher expected return and higher expected tax liabilities; see Derrig [1995]. According to Myers, just as the present value of the return from risky securities equals the present value of the return from risk-free securities, the present value of the federal income taxes on the investment income from risky securities equals the present value of the federal income taxes on the investment income from risk-free securities.

[7] If one dollar of investment income is received directly, the IRS takes about 30¢. If one dollar of investment income is earned through an insurance company, the IRS takes 83.85¢.

ERRATA TO

Statutory Surplus:
Computation, Pricing and Valuation

by Sholom Feldblum, FCAS, FSA, MAAA

July 7, 2016

The Errata to Statutory Surplus (Fifth Edition) is corrected as follows:

The second full paragraph on page 9, just above the section titled “Interest Due and Accrued” is replaced by the following paragraph. The corrected figure is shown in red below.

If by December 31, 20X4, incurred losses are $65 million, and the insurer expects another **$65 million** of incurred losses in the next six months, the DPAC is reduced to zero, and a premium deficiency reserve of $15 million is set up on both GAAP and statutory statements.

Common Pitfalls and Practical Considerations in Risk Transfer Analysis

Derek Freihaut, FCAS, MAAA, and Paul Vendetti, FCAS, MAAA

The current papers available on risk transfer have provided background and a general description of the tools available for analysis. Risk transfer analysis has many nuances that can trip up an actuary testing a contract. This paper discusses several of these pitfalls and provides direction on how to address them based on previously published materials from the accounting boards, the American Academy of Actuaries (AAA), and the Casualty Actuarial Society (CAS). This paper also addresses several outstanding risk transfer concerns that have no easy answers. While these issues do not have obvious solutions, the intent of the paper is to shed some light on these topics and open the door for further discussion.

To facilitate the discussion of these common pitfalls and practical considerations two example contracts are reviewed with an Expected Reinsurer Deficit (ERD) calculated for both.

Keywords: Risk transfer, Expected Reinsurer Deficit (ERD), FAS 113, Reinsurance Attestation Supplement (RAS), SSAP 62.

1. INTRODUCTION

Current papers available on risk transfer have provided background and a general description of the tools available for analysis. However, risk transfer analysis has many seemingly minor nuances that can trip up an actuary testing a contract. In this paper, we will discuss several of these pitfalls and provide direction on how to address them based on previously published materials from the accounting boards, the American Academy of Actuaries (AAA), and the Casualty Actuarial Society (CAS). We will also highlight a number of practical considerations that have not received as much attention in the available literature. While these practical considerations do not have obvious solutions, we hope to shed some light on the available options and open the door for further discussion on the topic.

1.1 Risk Transfer in Current Literature

This discussion is derived from a review of existing risk transfer literature, most notably "Reinsurance Attestation Supplement 20-1: Risk Transfer Testing Practice Note" from the AAA Committee on Property and Liability Financial Reporting and "Risk Transfer Testing of Reinsurance Contracts: Analysis and Recommendations" from the CAS Research Working Party on Risk Transfer Testing [1][2]. We also relied heavily on the accounting standards, Financial Accounting Standard No. 113, "Considerations in Risk Transfer Testing" (FAS 113) and SSAP 62, "Property and Casualty Reinsurance." While some discussion of the CAS Working Party paper and the AAA Practice Note is necessary, this paper is an attempt to go beyond the framework provided in the

current literature and review the more routine issues faced by actuaries in reviewing reinsurance transactions for risk transfer.

1.2 Objective

In this paper, we will discuss several pitfalls and practical considerations with risk transfer analyses. We will provide direction on how to address the pitfalls based on previously published materials and we hope to shed some light on the available options concerning the practical considerations and open the door for further discussion on the topics.

1.3 Outline

In Section 2 of this paper we will present a brief history and background of risk transfer, including a discussion of the terms "substantially all" and "self-evident," as well as discussion on measuring risk transfer and risk transfer thresholds.

Section 3 will contain a discussion on the pitfalls and practical considerations. We will start by showing two sample contracts that will be used as a basis for much of the discussion, and how to analyze risk transfer. Next we will cover various pitfalls, including discussion on the following topics:

- Profit Commissions
- Reinsurer Expenses
- Interest Rates and Discount Factors
- Premiums
- Evaluation Date
- Commutation and Timing of Payments

In the last part of Section 3, we will highlight some of the practical considerations in risk transfer testing, including discussion on:

- Parameter Selection
- Interest Rate
- Payment Pattern
- Loss Distribution

- Parameter Risk
- Use of Pricing Assumptions
- Commutation Clauses

The fourth and final section of the paper will contain a short wrap up, conclusions and a reminder that risk transfer testing is a principle-based exercise and not just a "plug and chug" methodological exercise.

2. BRIEF HISTORY OF RISK TRANSFER

Since the reinsurance goals of ceding companies are as different as the risks reinsured, reinsurance contracts contain a variety of terms and conditions that can impact the economic structure of the reinsurance transaction. When a contract qualifies as reinsurance there are certain accounting benefits that a ceding company can realize.

The demonstration of risk transfer for reinsurance is required by FAS 113 in order for the contract to receive reinsurance accounting treatment under Generally Accepted Accounting Principles (GAAP). Statutory Accounting Principles (SAP) defined in SSAP 62 are similar in guidance to FAS 113. Generally, both standards for risk transfer require that:

1. The reinsurer assumes significant insurance risk under the reinsured portion of the underlying insurance agreement; and

2. It is reasonably possible that the reinsurer may realize a significant loss from the transaction.

Because the terms "significant insurance risk," "reasonably possible," and "significant loss" are not defined in either accounting standard, the challenge is to appropriately interpret and apply the accounting standards to each reinsurance transaction.

The abuses of the past several years in the use of finite reinsurance contracts have highlighted the need to document and quantify risk transfer. An increase in scrutiny of reinsurance contracts led to the introduction of the "Reinsurance Attestation Supplement," in the 2005 NAIC Annual Statement.

The supplement requires the chief executive officer (CEO) and chief financial officer (CFO) to confirm that:

1. There are no separate written or oral agreements between the reporting entity and assuming

reinsurer.

2. There is documentation for every reinsurance contract for which risk transfer is not reasonably self-evident that details the transaction's economic intent and that documentation evidencing risk transfer is available for review.

3. The reporting entity complies with all requirements set forth in the Statement of Statutory Accounting Principles No. 62, "Property and Casualty Reinsurance" (SSAP 62).

4. The appropriate controls are in place to monitor the use of reinsurance.

CEOs and CFOs have the responsibility to attest to risk transfer in reinsurance transactions. However, since actuaries are uniquely qualified to quantify and evaluate risk transfer, they are increasingly being called upon to quantify risk transfer and provide the necessary documentation.

As mentioned above, GAAP and SAP accounting standards contain similar wording about what is required for risk transfer to be present. Most notably, both require the presence of insurance risk. Insurance risk has two components, underwriting risk and timing risk. If both of these types of risk are not present, then insurance risk has not been transferred. While risk transfer is independently defined in each standard, we are unaware of any examples of a contract that would meet the requirements of one standard, but not the other. Contracts that qualify according to one standard are generally considered to meet the requirements of the other standard as well.

2.1 One Exemption from Risk Transfer Requirements – "Substantially All"

Both GAAP and SAP accounting standards specifically require that it be reasonably possible that the reinsurer may realize a significant loss from the transaction, except in cases where the reinsurer meets the "substantially all" requirement. This is meant to exempt a very narrow definition of contracts where the reinsurer assumes "substantially all of the insurance risk relating to the reinsured portions of the underlying insurance contracts." The most common examples are straight quota share or individual risk contracts with no loss ratio caps or other risk limiting features. The reason for this exemption is that it allows companies to acquire qualifying reinsurance on inherently profitable books of business where it may not be reasonably possible that the reinsurer will realize a significant loss.

2.2 Required Risk Transfer Documentation and Reasonably Self-Evident

When the NAIC introduced the "Reinsurance Attestation Supplement" (RAS) in 2005 they also

introduced a new term to the risk transfer lexicon, "reasonably self-evident." The RAS requires documentation "for every reinsurance contract for which risk transfer is not reasonably self-evident." This classification of contracts is meant to reduce the need to rigorously test every reinsurance contract for risk transfer. Unfortunately, very little guidance was offered on what "reasonably-self evident" encompasses. The AAA Practice Note followed the introduction of the RAS and laid out some general guidelines for establishing when the presence of risk transfer is reasonably self-evident. The guidelines were general in nature and provided characteristics to look for in contracts to determine when risk transfer is reasonably self-evident and when it is not.

The CAS Working Party paper took these guidelines one step further and provided a list of specific contract categories where risk transfer is reasonably self-evident based on meeting a 1% Expected Reinsurer Deficit (ERD) threshold. They point out that this list is preliminary and expect it could be considerably expanded. They also point out that there are exceptions to the list, such as when a contract looks contrived. We feel that it can be dangerous to attempt to codify this terminology with explicit definitions. Every contract is different and must have its terms thoroughly reviewed.

Specifically, the CAS Working Party paper lists a couple of categories that we do not agree are always reasonably self-evident such as individual risk contracts and certain long tail excess of loss treaties. Individual risk treaties with no significant risk limiting features would likely be exempt from the accounting standards since the reinsurer assumes "substantially all" of the underlying risk. For individual risk contracts that do not qualify for this exemption, it is not hard to imagine special features that would restrict risk transfer.

For long tail excess of loss treaties, the CAS Working Party paper provides a few numerical qualifications to meet the reasonably self-evident standard. For excess of loss contracts that are not on short tail exposures, the CAS Working Party paper finds that any contract with aggregate limits no less than one per occurrence limit or twice the premium, meets the reasonably self-evident criteria if there are no ceding commissions and the rate on line is below 500%. It is not difficult to construct a contract around these parameters that clearly does not transfer risk. An extreme example would be a single doctor paying $1M for a $1M x $5M medical malpractice treaty with a $2M aggregate limit. This contract passes the established criteria for the risk transfer to be reasonably self-evident, but I think most would agree that not enough risk is transferred in this contract for it to qualify as reinsurance. This is obviously an unrealistic example, but it shows how applying specific parameters on the terminology can lead to unintended results.

The RAS requires documentation "for every reinsurance contract for which risk transfer is not reasonably self-evident." It seems obvious that any contract requiring a more rigorous review would also require documentation for the model results. However, it is our recommendation that documentation be kept on all reinsurance contracts reviewed for risk transfer. We think it is valuable to have documentation for those contracts found to be exempt for any reason, although the most notable are those that meet the "substantially all" clause. We find it to be just as important to document any contract where the risk transfer is found to be reasonably self-evident. While the term reasonably self-evident might lead one to believe the conclusion is obvious and anyone who picks up the contract will reach the same conclusion, not all contracts that meet this standard are clear cut. This is of particular importance if you are using any reference, such as the previously discussed list from the CAS Working Party Paper, to make your determination. The AAA Practice Note also recommends keeping documentation for reasonably self-evident contracts. The practice note also includes several example checklists in the appendix from companies who have made this type of documentation standard.

2.3 Selected Risk Measuring Method – Expected Reinsurer Deficit (ERD)

Neither SSAP 62 nor FAS 113 provide a clear numeric trigger of when risk transfer fails. The "10-10" rule was developed as a benchmark to give meaning to the criteria in the two accounting standards. The "10-10" rule says that a reinsurance contract exhibits risk transfer if there is at least a 10% chance of a 10% or greater loss for the reinsurer.

Another method that has gained acceptance and overcomes some shortcomings of the "10-10" rule is the Expected Reinsurer Deficit (ERD). ERD can be viewed as the probability of a net present value (NPV) underwriting loss for the reinsurer multiplied by the NPV of the average severity of the underwriting loss. A treaty is typically considered to exhibit risk transfer if ERD is greater than 1%, which is consistent with the "10-10" rule (10% loss multiplied by 10% chance is a 1% ERD). Therefore, contracts that qualify for risk transfer under the "10-10" rule generally qualify under a 1% ERD. We will discuss thresholds more in the next section.

ERD has not been explicitly endorsed by any professional body. However, while the CAS Working Party paper stopped short of endorsing ERD, they did prefer its use as a de facto standard over the "10-10" rule. There are a handful of other methods, but none of them are as widely used as the two previously mentioned. Some methods, such as Value at Risk (VaR) and Tail Value at Risk (TVaR) are generalizations of methodologies we have already discussed. Others, such as the

Right Tail Deviation (RTD) method by Wang outlined in the CAS practice note, have not caught on due to the complexity of the model [4][5]. There are also methods, such as the Risk Coverage Ratio (RCR) by Ruhm, which have not caught on due to the exclusion of key variables [3]. RCR does an adequate job of evaluating risk in the losses that are transferred, but it does not make any comparison to premium.

In this paper we will test for risk transfer using a simple cash flow simulation and calculating the Expected Reinsurer Deficit (ERD). While some of these other measures could be used in our example analysis we will use only ERD in the interest of consistency.

2.4 Risk Transfer Thresholds

The CAS Working Party paper began some brief discussion about what the appropriate guideline threshold percentage should be and suggested that further research be done. Currently, because it is consistent with the "10-10" rule, the most commonly recognized threshold for ERD is 1%. Some have suggested that a 2% threshold would be more appropriate. Our recommendation is to continue using the 1% threshold until a more thorough analysis suggests otherwise. Using 2% would be a more stringent guideline, but the 2% threshold does not appear to be any less arbitrary than the current 1% threshold. While the 1% threshold is based on the somewhat arbitrary "10-10" rule, there is some reasoning behind it. The "10-10" rule was loosely derived from the accounting standard language that required that the reinsurer face a "reasonable chance of a significant loss." For the purposes of risk transfer, it has been commonly accepted that a 10% chance is a "reasonable chance" and that a 10% loss is a "significant loss." From these two accepted values, the ERD of 1% has been derived and this threshold continues to gain acceptance.

The CAS Working Party paper also mentions the possibility of including other requirements, such as a required maximum loss, in order to show risk transfer. We recommend not complicating the methodology with extra arbitrary requirements. While adding a maximum loss requirement may feel intuitive, it begins to complicate the process and makes explaining results to the decision-makers more difficult. Adding requirements can also lead to more engineering of contrived contracts. If a maximum loss is required, any contract can be rewritten to incorporate a rare maximum loss.

3. COMMON PITFALLS AND PRACTICAL CONSIDERATIONS DISCUSSION

In order to illustrate the common pitfalls that can affect a risk transfer analysis it is first important to demonstrate how a basic risk transfer analysis is completed, highlighting many of the issues that can surface along the way. Many of the pitfalls referenced in this section are further emphasized later in the paper.

To demonstrate risk transfer analysis two reinsurance contracts are used. Contract #1 is a quota share contract while Contract #2 is an excess of loss contract.

The terms for Contract #1 are summarized in Table 1:

Table 1 - Summary of Terms - Contract #1

Inception Date	1/1/2008
Estimated Subject Premium	10,000,000
Reinsurance Premium	8,000,000
Cession	80.0%
Ceding Commission	25.0%
Profit Commission	
Loss Ratio	66.0%
Profit Swing	5.0%
Loss Ratio Cap	100.0%
Reinsurers Expenses as % of Prem.	
Brokerage	*2.0%*
Underwriting Exp.	*2.0%*
Federal Excise Taxes	*1.0%*

The underlying exposure for Contract #1 is multi-state workers compensation. The company has written workers compensation for a number of years. The cession is a straightforward quota share with a loss ratio cap of 100%. This loss ratio cap has the potential to significantly affect risk transfer. The presence of the loss ratio cap does not always indicate a lack of risk transfer. Contracts, with loss ratio caps at 200% to 300% can clearly result in a significant loss ot the reinsurer. Secondly, there is a profit commission provision whereby the ceding company will receive a profit commission if the underlying loss ratio is 66% or less with maximum profit provision of 5.0%. The profit provision swings on a one-to-one basis with the loss ratio. The impact of profit

provisions on risk transfer is discussed later in the paper.

The terms of the second contract are summarized in Table 2:

Table 2 - Summary of Terms - Contract #2

Inception Date	1/1/2008
Estimated Subject Premium	10,000,000
Provisional Reinsurance Rate	8.50%
Provisional Premium	800,000
Maintenance Fee	50,000
Retention	250,000
Limit	250,000
Swing Rate	
Swing Loss Ratio	75.0%
Minimum Rate	6.00%
Maximum Rate	11.00%
Reinsurers Expenses as % of Prem.	
Brokerage	*10.0%*
Underwriting Exp.	*7.0%*
Federal Excise Taxes	*1.0%*

This is an excess of loss contract covering workers compensation exposure that has a number of potential risk limiting features. The contract is swing rated with a provisional rate of 8.5% which can swing up or down by 2.5%. The swing is based on a ceded loss ratio of 75.0%. Secondly, there is a feature that states that the contract is automatically commuted after five years unless the ceding company pays an additional maintenance fee of $50,000.

For the two example contracts it is not reasonably "self-evident" that risk transfer exists due to the presence of such features as low loss ratio caps and swing-rated premiums.

3.1 Analyzing Risk Transfer

The first step in any risk transfer review is to understand the reinsurance contract's terms and conditions, focusing especially on the terms that can affect the amount of risk being transferred. Care must be taken to understand not only the terms of the treaty but also when those terms will be triggered. In Contract #2 there is a commutation clause that requires a maintenance fee to avoid early commutation that is triggered after five years.

Next the reporting dates and premium due dates need to be determined. In both example

contracts the reinsurance premium is payable in quarterly installments due one month after quarter end , i.e., on April 30, July 31, October 31, and January 31 of the following year.

In both contracts there is not a pre-defined loss payment schedule and therefore losses are reimbursed as they occur. To determine the net present value of the losses, a loss payment pattern reflecting the underlying exposure being reinsured is applied. It is further assumed that losses in any given calendar year are paid at the midpoint of the year.

For Contract #2, it is assumed that the first swing rate adjustment is applied two years after the contract's effective date. Most contracts will define the timing of the experience adjustments to the premium. It is also assumed in the model that the impact of the adjustment is correctly identified for the first adjustment with no further changes to the ceding commission necessary. This assumption implies that the ultimate loss ratio is known at the first adjustment.

The second assumption is that the commutation fee will be paid by the ceding company after five years. This is a reasonable assumption since the ceding company may not want to commute the contract and reassume the risk of changes in the unpaid claims estimates.

The risk transfer analysis was completed using Monte Carlo simulation, modeling first the direct loss payments and then projecting the treaty cessions from the direct loss payments. The ceded losses are then discounted to the effective date of the treaty. Next, the final premium amounts are determined based upon the nominal treaty results, not on the discounted premiums or losses. Any premium adjustments are determined from the modeled results. Care must be taken so that the premium payment dates are appropriately modeled. Like the losses, premium payments are discounted to the treaty effective date. The reinsurer profit/loss is then calculated for each iteration of the simulation as the net present value (NPV) of all payments made from the ceding company to the reinsurer minus the NPV of all the payments made from the reinsurer to the ceding company.

All cash flows between the ceding company and reinsurer need to be represented in the model whether they are called premiums, fees, or experience adjustments. Reinsurer expenses are not included in the model since this is not a cash flow between the ceding company and the reinsurer. For instance in Contract #2 the maintenance fee is included in the analysis and the reinsurer expenses are not. The reinsurer expenses are not part of the risk assumed by the reinsurer from the ceding company.

Finally, the Expected Reinsurer Deficit (ERD) is calculated. ERD can be viewed as the probability of a net present value (NPV) underwriting loss for the reinsurer multiplied by the NPV

of the average severity of the reinsurer underwriting losses. The resulting ERD values are 2.85% for Contract #1 and 2.09% for Contract #2. Details of the simulation and ERD calculation can be found in Appendices A and B. These results indicate that both of these contracts appear to exhibit risk transfer. This conclusion is based on the calculated ERD values and the commonly accepted threshold of 1.0%. As with any risk transfer decision, the ultimate determination must be made by the company CEO or CFO or both.

3.2 Common Pitfalls

This section will highlight easy-to-make mistakes or common pitfalls. Most of these come from our own experience in reviewing contracts for risk transfer and reviewing risk transfer analyses of other actuaries. It is our intent to provide concrete solutions citing previously published materials.

3.2.1 Profit Commissions

Profit commissions generally should not be considered in risk transfer analysis. When determining if risk transfer is present, the analysis focuses only on the scenarios resulting in a loss for the reinsurer. While profit commissions can affect the economic results of a treaty, they usually are not triggered during a reinsurer loss.

This exclusion of profit commissions and focus on reinsurer loss scenarios is not necessarily intuitive. However, the accounting standards clearly state that the presence of risk transfer requires a "reasonable chance of a significant loss" to the reinsurer. Therefore, the results of the ceding company should not be considered in a risk transfer analysis.

It is important to remember that contract features like profit commissions can still have an indirect impact on risk transfer. This impact on risk transfer stems from how these features may affect other aspects of the contract, most notably the premium. Reinsurance contracts are priced while considering any and all expected payments paid and received by the reinsurer. Any addition of a profit commission clearly increases the amount of future expected payments by the reinsurer to the ceding company and may result in a higher premium for the contract.

In the example analysis for Contract #1, the profit commissions were included in the simulation to demonstrate that they did not affect the reinsurer in any loss scenarios. However, if the contract failed to meet risk transfer requirements, the ceding company and the reinsurer may consider potential changes that would allow the contract to be accounted for as reinsurance. One potential change would be to eliminate or reduce the profit commissions with a corresponding decrease in

premium. This change in premium may result in the contract meeting risk transfer requirements.

Another way profit commissions can affect risk transfer is through carryforwards. Carryforwards may be used in multi-year contracts where the profits or losses from prior years may affect the results of the future years. A contract for periods of more than one year usually requires further testing for risk transfer and any carryforwards that may impact a loss position for the reinsurer would need to be incorporated into the model. Carryforwards can also be used in one-year contracts where the primary company and reinsurer agree to terms each year and at that time choose whether or not results will be carried forward. In this case each contract renewal may require a specific analysis. If there is a carryforward from a previous year that would affect results when there is a loss for the reinsurer, then it must be incorporated into the cash flow model. However, when considering one-year contracts with no impact from prior carryforwards there is no need to incorporate potential future carryforwards since they have no impact on the contract being reviewed.

3.2.2 Reinsurer Expenses

Only cash flows between the ceding company and the reinsurer should be considered in a risk transfer analysis. According to SSAP 62, "The evaluation is based on the present value of all cash flows between the ceding and assuming enterprises under reasonably possible outcomes." This means that broker expenses, operating expenses, fees related to letters of credit, and taxes should bear no impact on the analysis. As can be seen in the Appendices, the analyses of the example contracts did not incorporate any of these expenses that did not result in a cash flow between the reinsurer and the ceding company.

3.2.3 Interest Rates and Discount Factors

SSAP 62 requires a constant interest rate to be used for discounting across all simulated scenarios. The interest rate should not vary by scenario because risk transfer analysis should only consider insurance risk. Non-insurance risks such as investment risk, currency risk, and credit risk should not be included. The AAA Practice Note interprets this to also mean that the same interest rate should be applied to all cash flows, including premiums and losses.

SSAP 62 only requires the selection of the interest rate to be reasonable and appropriate. The AAA Practice Note recommends the risk free rate as a reasonable choice. This is not necessarily a conservative selection. Because the risk free rate is commonly below a reinsurer's expected

investment returns, it will actually result in higher projected present valued losses. However, the investment abilities of the reinsurer should not affect the presence of risk transfer, so the risk-free rate is a consistent and reasonable selection for the analysis. The selection of other interest rates is considered later in the paper.

SSAP 62 states that a reasonable and appropriate interest rate "generally would reflect the expected timing of payments to the reinsurer and the duration over which those cash flows are expected to be invested by the reinsurer." Therefore the duration used to select an interest rate should be based on the net cash flows to the reinsurer.

There has been a lot of guidance on interest rate selection and there is very little room for deviation from the use of a constant interest rate in all risk transfer analyses. However, in the selection of the interest rate the accounting standards do not prescribe a set framework and note that judgment is involved. While using a risk-free rate with duration equal to that of the reinsurers net cash flows is recommended, a selected rate could still be considered a "reasonable and appropriate rate".

Page 4 of Appendix A provides an example of calculating a duration using loss and premium payments and then selecting a risk-free rate based on that duration. To get the duration of the net cash flows we performed two duration calculations. First we determined the duration of the premium payments. This was straight forward since the premium payment schedule is laid out in the contract. Next the loss duration is calculated using an industry payment pattern. The duration of the net cash flows is then the difference between the two. This calculation may not be exact, but it is a good approximation of the "duration over which those cash flows are expected to be invested by the reinsurer," as the standard requires. The calculated duration of net cash flows was then used to select an interest rate based on the years of maturity and yield curve rates from the U.S. Treasury in Columns (7) and (8). This interest rate was used in the analysis for Contract #1.

For Contract #2 an interest rate was selected with consideration given to the current risk-free rates and longer expected payment pattern for an excess of loss contract.

3.2.4 Premiums

The premium paid by the ceding company is one of the most significant inputs when determining if risk transfer is present. When using the "10-10" rule or ERD all potential loss situations are going to be compared against the premium to calculate a percent of loss. While its importance is clear, what the premium should include is not nearly as straightforward.

First, the premiums used in risk transfer analysis should be gross premiums. This is specifically pointed out in SSAP 62. Gross premiums entail all premium paid to the reinsurer before the consideration of any payments back such as a ceding commission.

When making comparisons against premium to determine a reinsurer's profit or loss, it is required that the present value of the premium be used. Reinsurance contracts often lay out specific payment plans for premium. The same interest rate used to discount losses should be applied to calculate the present value of the premium. While the risk transfer analysis is a present value calculation, it is important to model the actual functioning of the contract. This means that the application of the loss ratio caps and experience adjustments are based upon the nominal premium and loss amounts. As shown in Appendix A, the loss ratio cap in Contract #1 is applied to nominal losses and premiums in the simulation. The discounting of premium and losses happens after the contract losses and premiums are determined and any caps or experience based features are applied.

When the premium of a reinsurance contract is dependent upon future events, using the proper premium in a cash flow simulation is slightly more complicated.

There are a number of premiums that could be considered for this purpose. The initial deposit premium is an intuitive and simple choice, but it does not account for future payments from the ceding company to the reinsurer and could therefore be easily manipulated. The other options are to use an expected premium or the actual premium in each scenario.

The use of expected premiums may also seem intuitive, but can be troublesome as well. The most significant concern with using expected premiums is the potential over detection of risk transfer. When premium is dependent upon loss experience, the highest premium levels often occur when the loss experience is the poorest and the reinsurer's losses are at their highest. If the reinsurer's percent of loss is calculated using an average expected premium, it is likely that the resulting reinsurer loss percentage will be a larger negative value than what is actually possible. Because of this it is imperative that actual premiums are developed along with the losses for each scenario and that each scenario has a corresponding percent of reinsurer loss developed. From these simulated results, percentiles and values such as ERD can be calculated.

It is not uncommon for a reinsurance contract to include fees other than premium. When there are fees that depend upon future events, the impact of these events should be included in the model. If it is not possible to include certain events in the model, a general assumption about their impact on any future cash flows may be necessary. The conservative decision would be to include all fees

that the ceding company may be required to pay to the reinsurer. There is an example of this in Contract #2, which requires a fee to delay mandatory commutation of the contract after five years. In the example it is assumed that the primary company will not want to commute the contract and reassume the risk after five years and therefore will be required to pay a fee of $50,000. When this type of fee is expected to occur, it should be considered as premium in any calculation of reinsurer loss. While the fee may be entirely administrative and related to the reinsurer's claim handling costs, any cash flows from the ceding company to the reinsurer should be considered as premium. If this were not the case, the determination of risk transfer could be manipulated based upon the labeling of certain cash flows as premiums or fees.

3.2.5 Evaluation Date

The date used in risk transfer analysis will likely only be used in the selection of an interest rate or in determination of how much was known about potential losses when the contract was entered into. SSAP 62 states that "risk transfer assessment is made at the inception date based on facts and circumstances known at the time." Therefore any parameters that may be affected by the date at which they were determined should be considered from the time of the contract's inception. The contract inception date is the date the contract comes into force, or the original effective date. According to SSAP 62 it is not necessary to retest for risk transfer at every renewal unless there are any significant amendments made to the treaty. If a contract is tested at inception, the results of that test are unlikely to change. In the case of an amendment that makes a material change to the amount of risk being transferred, the amendment date should be treated as the inception date of the contract and the contract should be reviewed again for risk transfer.

3.2.6 Commutations and Timing of Payments

According to SSAP 62, any reinsurance contracts that have prescribed payment patterns do not meet the risk transfer requirements. In order to have risk transfer in a reinsurance contract, there must be timing risk as well as underwriting risk. Prescribed payment plans remove the timing risk necessary for risk transfer. In order for the contract to contain timing risk the reinsurer must make "timely reimbursement payments."

Contracts with commutation clauses may still meet risk transfer requirements, but to the extent they affect the cash flows between the ceding company and reinsurer, they must be modeled. If a fee is required to avoid an early forced commutation, this fee should be considered as part of the expected premium paid. If the commutation decision is unilateral, it may be necessary to

incorporate the commutation decision into the model based on economically rational decision making. To the extent the commutation clause impacts the payment pattern, this too should be considered in the cash flow model.

3.3 Practical Considerations

This section is meant to highlight a number of practical considerations that commonly appear in risk transfer analyses and have not been thoroughly addressed in the current literature. While not all of these practical considerations have obvious solutions, we hope to shed some light on the available options and open the door for further discussion on the topics.

3.3.1 Parameter Selection

One of the first and most important steps in performing a cash flow simulation for risk transfer analysis is choosing the parameters. Any parameters that are not given by the contract must be selected after some contemplation. This includes the interest rate, payment pattern, and any loss distributions used for projecting cash flows.

3.3.2 Interest Rate

Making the appropriate interest rate selection was previously addressed in the Common Pitfalls section. Using a risk-free rate based upon a duration calculation and the expected premium and loss payments is recommended by the AAA Practice Note. It is also required by the accounting standards that the same rate be used throughout the analysis.

While the risk-free rate is recommended, there are other possibilities to consider. It is difficult to envision a scenario were it would be reasonable to use an interest rate that is lower than the risk-free rate. This may seem conservative, but using a lower interest rate would lead to higher losses at present value and could result in over-detecting risk transfer. It is also difficult to construct an argument for why a company would not have the risk-free rate available to them. Therefore, it seems reasonable to treat the risk-free rate as the lowest possible choice, or floor, when selecting an interest rate.

A better argument could be made for selecting an interest rate above the risk-free rate. The most logical argument is that the reinsurer in the contract has a higher expected return on investments and this expected return should be used when determining if they face a "reasonable chance of a significant loss." While this argument is intuitive, it does have its flaws. First, this is not likely an

available parameter if the risk transfer analysis is being done on behalf of the ceding company. Next, if a reinsurer's expected investment returns are used in the risk transfer analysis, it will create the situation where a contract may be found to exhibit risk transfer for a reinsurer with poor investment strategy, but be found not to transfer risk for a reinsurer with superior investment strategies. This type of counter-intuitive result is also why cash flows that are not between the ceding company and the reinsurer are not considered.

Based on these considerations it is difficult to construct an argument for using anything that is not at least loosely based upon the risk-free rate. For consistency and to provide support for the interest rate selected, it may be worthwhile to base the selection on the treasury yields available at the inception date of the contract and the expected duration of the cash flows, as was done in the example for Contract #1. This approach is consistent with the recommendation from the AAA Practice Note. However, depending on the situation and in an effort to keep an analysis simple, it may also be just as reasonable to select an appropriate approximation of the current risk-free rate, as was done in the example for Contract #2.

An alternative to selecting a duration-matched interest rate, which has been used by some practitioners, is the selection of a constant yield curve. Use of a yield curve is common in company planning and in making economic decisions on contracts. However, the use of yield curves in risk transfer analysis does not appear to be consistent with the accounting standards. The AAA Practice Note finds that SSAP 62 requires, "that a single interest rate be used to present-value the cash flows."

A constant yield curve would generally result in a more stringent risk transfer analysis since interest rates tend to be higher at longer durations. The typical yield curve would lead to more discount being applied to losses in comparison to the premiums, which are often paid much quicker. While the use of a yield curve may seem like an improvement to the analysis, the language in the accounting standards clearly leads to a similar conclusion to the AAA Practice Note. Both standards refer to the use of "a constant interest rate," through all cash flow scenarios. The intent of the standards appears to be that interest rate risk should not be incorporated in the model. Thus, an interest rate that varies by scenario is not allowed. Capturing interest rate risk is not the intent of incorporating a yield curve into the analysis. A constant yield curve across all scenarios would only result in a different interest rate when the timing of the cash flows differed, which reflects risk due to the timing of losses and premiums, not the interest rate. However, the use of a yield curve to discount cash flows would result in a different effective interest rate when no losses are paid

compared to a situation where significant losses are paid. This appears to violate the requirement in SSAP 62 that the "same interest rate shall be used to compute the present value of cash flows for each reasonable possible outcome tested."

3.3.3 Payment Pattern

Payment patterns are often based on previous experience for the ceding company or industry benchmarks or both. While this can be a simple parameter to select, it is important to remember that there is uncertainty involved in the payment pattern. While this risk is more difficult to measure than the risk involved in a loss distribution, the timing of payments can play a significant role in the amount of risk transferred. For example, when a constant payment pattern is applied to a loss distribution, the results will not recognize the potential impact of quicker than expected payments. This will have the most significant impact on the tails of the distribution, which is often the portion we are the most interested in for determining risk transfer. While introducing variability into a payment pattern may be too complicated for the benefit it provides, it is important to at least consider this risk as you complete your analysis.

3.3.4 Loss Distribution

Loss distributions are often based on previous company experience, industry benchmarks, pricing information, or judgment, or all of these factors. For transactions covering large books of business with several years of historical experience available, selecting a loss distribution can be as easy as fitting a distribution to the available data. For books of business with low premium volume or immature loss experience, selecting the appropriate distribution can be much more difficult. Even for mid-size books of business it can be difficult to select a loss distribution because risk transfer testing focuses on the right tail of the distribution. This concern is compounded when working with high-level excess of loss contracts. However the loss distribution is determined, it is important to test the reasonableness of the tail results. Having an adequate comfort level with the tail results produced by the selected distribution is crucial.

When a company does not have enough historical loss experience to base a distribution upon, it is typical to turn to industry benchmarks or the information used to price the reinsurance contract. The use of pricing assumptions in risk transfer analyses is discussed later in the paper. Industry data can provide a starting point for overall expected loss ratios or frequencies and severities. However, it is difficult to select a distribution and develop a variance using only industry results. Individual companies can experience significantly higher variance in their loss than the industry as a whole. In

these instances it may be necessary to rely on some generally accepted distributions. Likewise a selected variance will be required. This selection will depend on a number of considerations, such as the size of the book of business, the type of coverage, the type of business being underwritten, and a variety of other factors.

3.3.5 Parameter Risk

A key consideration for any simulation model is parameter risk. Cash flow simulations for risk transfer are no different. As we previously discussed, selecting parameters to simulate future loss payments is a difficult process and it is important to account for the risk that the selected parameters or model are incorrect. Accounting for this increased variability in your simulation will increase the likelihood that your analysis will determine risk transfer is present. This is a reasonable result when you consider that the reinsurer is clearly accepting this same parameter risk when entering into the contract.

Parameter risk can be accounted for explicitly or implicitly. Implicitly it can be reflected in a slightly higher expected loss selection or in an increase to the expected volatility of losses. In the case of explicit recognition it is common to see a probability distribution assigned to key parameters and then to have them simulated also. This provides some variability to the selected parameters to help account for parameter risk. While this is a more concrete method than including it implicitly, it also depends on judgment and the selection of more distributions and parameters. There is not much information available about incorporating parameter risk into cash flow simulation models. Currently, there are no widely accepted methods and the costs of more complicated techniques may tend to outweigh the benefits.

Parameter risk is going to have the greatest impact on the losses simulated, but it can affect other facets of the analysis as well. When premium projections must be estimated based on the treaty terms, there is some additional parameter risk, but it will rarely affect the result of the analysis. There is also parameter risk in the discounting function used in the analysis. However, not all of that risk should be accounted for in a risk transfer analysis.

The majority of the parameter risk in discounting comes from two key inputs, the payment pattern and the interest rate. As we previously discussed, there is real risk in not incorporating an accurate payment pattern. This risk relates to timing risk, which is a part of insurance risk and should be considered in a risk transfer analysis. The second piece of the discount, the interest rate, however, should not contribute any risk, parameter or process, to the analysis. SSAP 62 clearly

states that "the possibility of investment income varying from expectations is not an element of insurance risk."

Because there are no widely accepted methods and because the methods available either require some arbitrary selections or may add more cost than benefit to the analysis, we do not feel that parameter risk must be explicitly shown in a risk transfer analysis. We would strongly encourage practitioners to at least include it implicitly if not explicitly. Regardless, we recommend documenting the existence of parameter risk and, whether or not it is included in the analysis, documenting how it could affect the results. This documentation can be beneficial if another actuary needs to review the analysis. More importantly, parameter risk is too important to entirely exclude from both the analysis and the report when the analysis may be directly used to make the decision on risk transfer.

3.3.6 Use of Pricing Assumptions

One potential resource, if available, for selecting parameters for small or immature books of business is the reinsurance pricing assumptions. This concept is very attractive since a properly priced reinsurance agreement is likely to be based on an appropriate expected loss assumption with an appropriate risk load and payment pattern. While we are often more interested in a loss distribution than just the expected losses for testing risk transfer, these assumptions can help provide some of the necessary parameters for our simulation.

Pricing assumptions can also be helpful in parameter selection since they reflect how risky the market views a particular piece of business. The reinsurance market may provide a better indication of the amount of risk involved in a small new primary company searching for reinsurance than what you could find based on industry benchmarks. Of course, this market-driven view of a reinsurance contract is also one of the biggest drawbacks to using pricing assumptions. Simulation testing for risk transfer should be based on expected loss experience and should not be market-driven. Pricing assumptions should only be used in selecting parameters when reasonable. A hard insurance market with higher premiums does not mean that companies do not need to meet the same risk transfer standards. Because of this, when available, the underlying data that the pricing assumption was based upon can be even more beneficial than the parameters actually used in the pricing of the reinsurance.

To correctly apply the expected loss assumptions from a pricing model to a risk transfer analysis, it is important to properly account for the risk load in the pricing. In many reinsurance contracts,

risk load is a significant piece of the puzzle. It may be implicitly added into the expected loss ratio or explicitly stated in the development of the rate. If it is implicit in the expected losses, it is important not to blindly carry forward the expected losses without recognizing the extra loaded amount. If it is explicitly stated, intuitively there should be a relationship between this risk load amount and the level of risk inherent in the underlying coverage. While this risk load reflects the amount of variability the reinsurer anticipates in the contract, it is not easy to translate this load into a variance for your loss distribution. However, it is worthwhile to at least consider the size of this risk load when selecting the loss distribution and variance.

Another caveat to remember when using pricing information to select parameters for risk transfer testing is that while both practices are generally aimed at determining expected future losses, they both are doing so for very different reasons. The differences in intent can lead to different approaches and selections. Notably, when pricing a reinsurance contract, it might be considered prudent to make conservative selections. This might lead to slightly higher expected losses and risk load. These selections would not be considered conservative in a risk transfer analysis. Selecting higher expected losses and increasing the expected variability would lead to over-detecting risk transfer. For risk transfer testing the more conservative approach would be to use lower expected losses and variability. These differences in approach are important to remember anytime you are relying on assumptions from an analysis developed for a different purpose.

While pricing assumptions can clearly provide valuable input to any risk transfer analysis, it should also be clear that there are variety of reasons one may deviate from them. This is true even for reinsurance analysts who may be testing the same contracts they priced. These two exercises might require different assumptions about the modeled losses. Loss models used for pricing are often optimized based on their projections of all the potential results. Risk transfer, on the other hand, requires a model that is optimized on the right tail of the distribution. Due to this distinct difference in focus, the resulting selections for loss distribution and/or parameters may not be the same for pricing and risk transfer analysis.

3.3.7 Commutation Clauses

As previously discussed, any mandatory fees to delay a required commutation should be included when determining if risk transfer is present. Commutation clauses should be read carefully to determine their entire impact on risk transfer. While commutation clauses do not often prohibit a contract from exhibiting risk transfer, it is important to recognize that any commutation requirement

does restrict the amount of risk transferred. It is not uncommon for these clauses to set a predetermined date for commutation based on an actuarial determination of the unpaid claim estimates at that time. While this is a fair method for completing a commutation, it does require the ceding company to reassume the risk of any changes in the unpaid claims after the predetermined commutation date. This clearly returns some risk back to the ceding company, limiting the amount of risk transferred in the original transaction.

If a commutation clause states that the future commutation will be based on a mutually agreed upon value or on an actuarial determination, the payment pattern used to discount losses in the risk transfer analysis may not need to be adjusted. While the commutation may result in an earlier payment than anticipated by the reinsurer for any outstanding claims, the payment should reflect the present value of expected payments at that time and the impact on the original payment pattern assumption should be minimal. If there are explicit rules for the calculation of the value of outstanding claims at commutation, these rules may need to be included in the original analysis and may affect the selected payment pattern.

4. CONCLUSIONS

It is important to remember that none of the methods to test risk transfer provide a "bright line" indicator for its existence. While actuaries have the necessary skill set to evaluate the existence of risk transfer in any reinsurance contract, the final decision belongs to the CEO or CFO of the company. Risk transfer analysis, and more specifically ERD, is a tool to aid them in that decision. If a risk transfer analysis produces a borderline result, such as an ERD of 0.95% or 1.05%, it will likely require further consideration and documentation to show that risk transfer does or does not exist in the contract being reviewed. Risk transfer testing is a principle-based exercise and the existence of risk transfer is entirely based upon there being a "reasonable chance of a significant loss" to the reinsurer. ERD and other methodologies are just tools to help determine if a contract meets this standard.

Acknowledgment

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Abbreviations and notations

AAA, American Academy of Actuaries
CAS, Casualty Actuarial Society
ERD, Expected Reinsurer Deficit
FAS 113, Financial Accounting Standard No. 113
RAS, Reinsurance Attestation Supplement
SSAP, Statement of Statutory Accounting Principles

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ACME Insurance
Quota Share
Risk Transfer - Simulation Analysis

Table 1 - Summary of Terms - Contract #1

Inception Date	1/1/2008
Estimated Subject Premium	10,000,000
Reinsurance Premium	8,000,000
Cession	80.0%
Ceding Commission	25.0%
Profit Commission	
Loss Ratio	66.0%
Profit Swing	5.0%
Loss Ratio Cap	100.0%
Reinsurers Expenses as % of Prem.	
Brokerage	*2.0%*
Underwriting Exp.	*2.0%*
Federal Excise Taxes	*1.0%*

Table 2 - Simulation Assumptions

Model Loss Ratio excluding ALAE	
Lognormal distribution	
Mean	65.0%
Standard Deviation	20.0%
Minimum Loss	45.0%

Table 3 - Results

Frequency	Sum of Col (10) / 10,000	19.7%
Severity	Sum of Col (9) / Sum of Col (10)	-14.5%
ERD as a % of Reins Prem.	ERD / Reinsurance Premium	-2.85%

Table 4 - Percentiles

Percentile	Loss Ratio	NPV Of Reinsurer Profit / Loss
75%	95.9%	4.1%
80%	99.7%	0.3%
90%	110.5%	-10.5%
95%	118.5%	-18.5%

Iteration #	Direct Loss and LAE Ratio (1)	Direct Losses and LAE (2)	Ceded Losses and LAE (3)	NPV Treaty Losses (4)	Ceding Commission (5)	Profit Commission (6)	NPV Treaty Premium Net of Ceding & Profit Comm (7)	NPV Reinsurer Gain/Deficit (8)	NPV Reinsurer Deficit as a % of NPV of Treaty Premium (9)	Frequency of Deficit (10)
1	63%	6,342,599	5,074,079	4,649,828	2,000,000	164,736	5,724,700	1,074,871	0.0%	0
2	58%	5,792,740	4,634,192	4,246,721	2,000,000	320,000	5,578,412	1,331,691	0.0%	0
3	52%	5,175,628	4,140,502	3,794,309	2,000,000	320,000	5,578,412	1,784,103	0.0%	0
4	45%	4,500,000	3,600,000	3,298,999	2,000,000	320,000	5,578,412	2,279,413	0.0%	0
5	45%	4,500,000	3,600,000	3,298,999	2,000,000	320,000	5,578,412	2,279,413	0.0%	0
6	80%	7,973,888	6,379,111	5,845,744	2,000,000	0	5,879,913	34,169	0.0%	0
7	45%	4,500,000	3,600,000	3,298,999	2,000,000	320,000	5,578,412	2,279,413	0.0%	0
8	53%	5,307,827	4,246,262	3,891,226	2,000,000	320,000	5,578,412	1,687,186	0.0%	0
9	69%	6,928,552	5,542,842	5,079,397	2,000,000	0	5,879,913	800,516	0.0%	0
10	45%	4,500,000	3,600,000	3,298,999	2,000,000	320,000	5,578,412	2,279,413	0.0%	0
9,990	48%	4,783,431	3,826,745	3,506,785	2,000,000	320,000	5,578,412	2,071,627	0.0%	0
9,991	113%	11,284,849	9,027,879	7,331,108	2,000,000	0	5,879,913	-1,451,196	-24.7%	1
9,992	55%	5,470,802	4,376,642	4,010,705	2,000,000	320,000	5,578,412	1,567,707	0.0%	0
9,993	86%	8,606,365	6,885,092	6,309,420	2,000,000	0	5,879,913	-429,507	-7.3%	1
9,994	122%	12,230,549	9,784,439	7,331,108	2,000,000	0	5,879,913	-1,451,196	-24.7%	1
9,995	54%	5,350,772	4,280,618	3,922,709	2,000,000	320,000	5,578,412	1,655,703	0.0%	0
9,996	91%	9,128,508	7,302,806	6,692,208	2,000,000	0	5,879,913	-812,295	-13.8%	1
9,997	81%	8,050,084	6,440,067	5,901,604	2,000,000	0	5,879,913	-21,691	-0.4%	1
9,998	106%	10,578,897	8,463,117	7,331,108	2,000,000	0	5,879,913	-1,451,196	-24.7%	1
9,999	79%	7,892,701	6,314,161	5,786,225	2,000,000	0	5,879,913	93,688	0.0%	0
10,000	83%	8,319,856	6,655,885	6,099,377	2,000,000	0	5,879,913	-219,464	-3.7%	1

Column
(1) Based upon the model assumptions in Table 2
(2) Estimated Subject Premium x Col (1)
(3) Cession Percent x Col (2)
(4) Minimum of Col (3) or Loss Ratio Cap x Reinsurance Premium, multiplied by Page 3 Col (2)
(5) Reinsurance Premium x Ceding Commission
(6) 1% for every 1% of ultimate loss that is lower than 66%, maximum adjustment 5%
(7) Total Page 2 Col (6) + Col (6) / [(1 + Discount Rate)^2.0833], assumes profit commision is paid 2 years one month after policy effective date
(8) Col (7) - Col (4)
(9) If Col (8) < 0 then Col (8) / Col (7) else 0
(10) If Col (8) < 0 then 1 else 0

ACME Insurance
Quota Share
Risk Transfer - Simulation Analysis
Premium Discount Factor - Exclude Profit Share

Discount Rate Assumption:

(1)	Interest Rate	2.9%
(2)	Discount Factor	0.980

Time of Payments in Months (3)	Premium (4a)	NPV of Premium (4b)	Ceding Commission (5)	Premium Net of Ceding Commission (6)	Discounted Premium Net of Ceding Commission (7)
4	2,000,000	1,981,032	-500,000	1,500,000	1,485,774
7	2,000,000	1,966,925	-500,000	1,500,000	1,475,193
10	2,000,000	1,952,917	-500,000	1,500,000	1,464,688
13	2,000,000	1,939,010	-500,000	1,500,000	1,454,257
Total	8,000,000	7,839,884	-2,000,000	6,000,000	5,879,913

Column/Row	Note
(1)	Page 4, Row (12)
(2)	Total Col (7) / Total Col (6)
(3)	Month premium is due, assumes quarterly payments due one month after quarter end.
(4a)	Reinsurance Premium divided by 4, assumes quarterly payments.
(4b)	Col (4a) / {[1 + Col (1)] ^ (Col (3) / 12)}
(5)	Ceding Commission divided by 4, assumes quarterly payments.
(6)	Col (4a) + Col (5)
(7)	Col (6) / {[1 + Col (1)] ^ (Col (3) / 12)}

ACME Insurance
Quota Share
Risk Transfer - Simulation Analysis
Discount Factor

Discount Rate Assumption:

(1)	Interest Rate	2.9%
(2)	Discount Factor	0.916

Years of Maturity	% of Ultimate Paid Cum.	Incr.	Discounted Payment
(3)	(4)	(5)	(6)
0	0.00%	0.00%	0.00%
1	20.00%	20.00%	19.72%
2	42.00%	22.00%	21.08%
3	60.00%	18.00%	16.76%
4	70.00%	10.00%	9.05%
5	77.50%	7.50%	6.59%
6	82.00%	4.50%	3.85%
7	90.00%	8.00%	6.64%
8	95.00%	5.00%	4.04%
9	100.00%	5.00%	3.92%

Column/Row	Note
(1)	Page 4, Row (12)
(2)	Sum Col (6) / Sum of Col (5)
(4)	Industry Benchmarks
(5)	Current (4) - prior (4)
(6)	Col (5) discounted to time zero

ACME Insurance
Quota Share
Risk Transfer - Simulation Analysis
Interest Rate

Years of Maturity	% of Ultimate Losses Paid Cum.	Incr.	Time of Payments in Months	% of Ultimate Premiums Paid Cum.	Incr.	Daily Treasury Years of Maturity	Yield Curve Rates
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0	0.00%	0.00%	4	25.00%	25.00%	0.5	3.32%
1	20.00%	20.00%	7	50.00%	25.00%	1.0	3.17%
2	42.00%	22.00%	10	75.00%	25.00%	2.0	2.88%
3	60.00%	18.00%	13	100.00%	25.00%	3.0	2.89%
4	70.00%	10.00%				5.0	3.28%
5	77.50%	7.50%				7.0	3.54%
6	82.00%	4.50%				10.0	3.91%
7	90.00%	8.00%					
8	95.00%	5.00%					
9	100.00%	5.00%					
10	100.00%	0.00%					

(9)	Duration of Loss Payments	3.14
(10)	Duration of Premium Payments	0.71
(11)	Duration of Net Cash Flows	2.43
(12)	Selected Interest Rate	2.9%

Column/Row	Note
(2)	Page 3 Column (4)
(3)	Page 3 Column (5)
(4), (5), (6)	Based on premium payments on Page 2
(8)	Rates from U.S. Treasury Securities as of 1/2/08
(9)	Based on loss payment pattern in Column (3)
(10)	Based on premium payment pattern in Column (6)
(11)	Row (9) - Row (10)
(12)	Selected

ACME Insurance
Excess of Loss
Risk Transfer - Simulation Analysis

Table 1 - Summary of Terms - Contract #2

Inception Date	1/1/2008
Estimated Subject Premium	10,000,000
Provisional Reinsurance Rate	8.50%
Provisional Premium	800,000
Maintenance Fee	50,000
Retention	250,000
Limit	250,000
Swing Rate	
Swing Loss Ratio	75.0%
Minimum Rate	6.00%
Maximum Rate	11.00%
Reinsurers Expenses as % of Prem.	
Brokerage	*10.0%*
Underwriting Exp.	*7.0%*
Federal Excise Taxes	*1.0%*
Modeled Loss Ratio	120.0%

Table 2 - Simulation Assumptions

Model Severity ALAE		Model Frequency	
Lognormal distribution		Poisson distribution	250
Mean	30,000		
Standard Deviation	120,000		
Minimum Loss	0		

Table 3 - Results

Frequency	Sum of Col (10) / 10,000	10.4%
Severity	Sum of Col (9) / Sum of Col (10)	-20.1%
ERD as a % of Reins Prem.	ERD / Reinsurance Premium	-2.09%

Table 4 - Percentiles

Percentile	NPV Of Reinsurer Loss
75%	0.0%
80%	0.0%
90%	-1.0%
95%	-16.5%

Claim #	Direct Loss and LAE (1)	Ceded Loss and LAE (2)	NPV Ceded Loss and LAE (3)	Provisional Premium (4)	Experience Adjustment (5)	Commutation Fee (6)	Final Premium and Fees (7)	NPV Treaty Premium Net of Rate Swing (8)	NPV Reinsurer Gain/Deficit (9)	NPV Reinsurer Deficit as a % of NPV of Treaty Premium (10)	Frequency of Deficit (11)
1	1,758	0	0	800,000	250,000	50,000	1,100,000	1,056,133	204,656	0.00%	0
2	3,566	0	0								
3	2,762	0	0								
4	15,271	0	0								
5	5,648	0	0								
6	11,158	0	0								
7	39,765	0	0								
8	326,745	76,745	68,050								
9	36,936	0	0								
10	10,469	0	0								

Column
(1) Based upon the model assumptions in Table 2
(2) Ceded loss based upon the treaty terms
(3) Col (2) x Appendix B, Page 3
(4) Estimated subject premium times provisional reinsurance rate
(5) Actual modeled loss ratio minus swing loss ratio + provisional reinsurance rate; subject to Maximum and Minimum rate
(6) Assumes fee to commute under all scenerios
(7) (4) + (5) + (6)
(8) Page 2 Col (4b) + Col (5) / [(1 + Interest rate) ^ 2.0833] + Col (6) / [(1 + Interest rate) ^ 5.0833]
(9) Col (8) - sum of Col (3)
(10) If Col (9) < 0 then Col (9) / Col (8) else 0
(11) If Col (9) < 0 then 1 else 0

Discount Rate Assumption:

(1)	Interest Rate	3.5%
(2)	Discount Factor	0.976

Time of Payments in Months (3)	Premium (4a)	NPV of Premium (4b)
4	200,000	197,720
7	200,000	196,027
10	200,000	194,348
13	200,000	192,684
Total	800,000	780,778

Column/Row	Note
(1)	Selected
(2)	Total Col (4b) / Total Col (4a)
(3)	Month premium is due, assumes quarterly payments due one month after quarter end
(4a)	Reinsurance Premium divided by 4, assumes quarterly payments
(4b)	Col (4a) / {[1 + Col (1)] ^ (Col (3) / 12)}

Discount Rate Assumption:

(1)	Interest Rate	3.5%
(2)	Discount Factor	0.887

Years of	% of Ultimate Paid		Discounted
Maturity	Cum.	Incr.	Payment
(3)	(4)	(5)	(6)
0	0.00%	0.00%	0.00%
1	19.27%	19.27%	18.94%
2	42.02%	22.75%	21.61%
3	58.15%	16.13%	14.80%
4	68.72%	10.57%	9.37%
5	75.41%	6.69%	5.73%
6	79.71%	4.29%	3.55%
7	82.97%	3.27%	2.61%
8	85.24%	2.27%	1.76%
9	87.01%	1.76%	1.32%
10	88.41%	1.40%	1.01%
11	95.50%	7.09%	4.94%
12	100.00%	4.50%	3.03%
13	100.00%	0.00%	0.00%

Column/Row	Note
(1)	Selected
(2)	Sum Col (6) / Sum of Col (5)
(4)	Industry workers compensation benchmarks
(5)	Current (4) - prior (4)
(6)	Col (5) discounted to time zero

GOVERNMENT INSURERS STUDY NOTE
APRIL 2017

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INTRODUCTION

Nyce [1] provides an excellent introduction to government insurance including the five main reasons for government insurance, which are summarized in this study note.

Both the federal and state governments are involved in insurance as regulators of insurance companies and as insurers. As insurers, they participate in a number of insurance programs either as the sole insurer, in partnership with insurance companies or in competition with insurance companies. Several major programs that are discussed elsewhere in the syllabus include the National Flood Insurance Program, Social Security, Guaranty Funds, FAIR plans, TRIA, and various state Auto Plans. In this study note, we will discuss state and federal involvement in Workers Compensation Insurance, Crop Insurance, and Unemployment Insurance.

Is government participation in insurance necessary? According to Greene and Weining, there are several reasons for government participation in insurance:

- Filling insurance needs unmet by private insurance
- Compulsory purchase of insurance
- Convenience
- Greater efficiency
- Social purposes

Filling Insurance Needs Unmet by Private Insurance

According to Nyce [1] and Greene [2], one justification for government participation in insurance is the residual market philosophy, with governments offering insurance in markets unserved by private insurance; either because of unavailability or affordability. One implication of the residual market philosophy is that government requirements for insurability are different from private insurers' requirements. A government may step into situations in which private insurers do not because the government has the financial capacity to subsidize losses, either by directly taxing taxpayers for the insurance program even those who do not benefit from the program, or indirectly by charging less than the actuarial cost of providing insurance coverage for the exposure and making up the difference through government-provided funds (crop / flood). There are strong

arguments, both pro and con, as to whether a government should provide this type of subsidy.

Begun in 1968, the Federal Crime Insurance Program was intended to provide coverage for homeowners and small businesses located in neighborhoods with high crime rates, primarily because private insurance for burglary or robbery was not available at affordable rates for these risks. With proper loss prevention methods, this insurance was available from the private market at rates less than the government rates and the Federal Crime Insurance Program expired in 1995.

Crop insurance and Flood insurance are available and affordable only because of subsidies from the federal government.

Compulsory Purchase of Insurance

Government may require individuals or businesses to obtain insurance to meet social responsibilities. A driver who causes an automobile accident is responsible for repairing the damage or injury caused by the accident. Many people would not have the financial resources to meet this obligation without insurance protection. An employer is deemed responsible for injury to an employee regardless of fault. Again, without insurance protection an employer may not be able to meet this obligation. Without a compulsory insurance requirement, some persons who have suffered injury or loss may not have the costs of repairing the damage to their property or their medical costs covered by the person responsible for these costs.

Since purchase of insurance such as workers compensation or automobile insurance may be compulsory, some state legislatures felt obliged to offer the insurance to individuals who could not find a private market [2]. The workers compensation state funds established in several states and the Maryland Automobile Insurance Fund are examples of this philosophy. Another reason why some federal and state legislators believe that government should provide compulsory insurance is that private companies should make only limited profits, given the government guaranteed market. A government program would operate as a not-for-profit entity and the cost of the compulsory insurance would be lower than if offered by a for-profit insurer. In other non-insurance government mandated programs such as highway construction contracts, private organizations often service the program. Within a purely competitive market excessive profits cannot persist in the long run. Private insurance seems to work for most states in supplying the vast majority of the public with compulsory insurance such as workers compensation and auto insurance.

While workers compensation insurance is administered by a monopolistic state fund in a few states, most states have private companies that offer workers compensation insurance, sometimes in competition with state-run funds that will provide coverage to anyone who applies for coverage to the fund, sometimes referred to as “take all comers.” For those states without a state fund, and some with a state fund, there is usually some

other form of residual market that provides coverage to those who are unable to find the required coverage with a private insurer.

For compulsory auto insurance, government insurance is normally not the answer; so provisions are in place to make auto insurance available for those unable to buy insurance on the open market. Sometimes these alternate sources also provide the coverage at costs below the actuarial cost of providing the coverage. In these situations, insurers, other insureds or taxpayers subsidize part of the cost of the coverage for high risk drivers. Hamilton and Ferguson [3] discuss these provisions, which include assigned risk plans, reinsurance facilities, and joint underwriting associations depending on the state. Maryland has the only state-owned auto insurance company.

Convenience

Some government insurance programs are established because it appears to be easier for the government to set up a program quickly as a legislature can appropriate funding for the new program, whereas the private market may take longer to find the necessary funding [3]. A government program may also be already set up to provide certain types of services needed by the insurance program. These services include loss mitigation development and funding, as the Florida legislature did when establishing the Florida Hurricane Catastrophe Fund.

Using government insurance programs only for convenience may not be justified if the private market is willing and able to provide a reasonable market.

Greater Efficiency

One argument in favor of government insurance is that there is greater efficiency than in the private market [2]. Some government insurance programs may be established because of the belief that government can provide the service at a lower cost than the private market. However, the costs of providing insurance, including the costs of keeping records, providing consumer education, issuing policies and paying claims, exist even in government insurance programs. Services such as explaining coverages, keeping records, and handling claims questions are still provided by customer service representatives (who must be compensated). The cost savings claimed for government insurance programs might be overstated because other government departments may perform services on behalf of the government insurance entity that are usually performed by insurance companies, including appraising property, administering claims, or making investments.

Social Purposes

The use of government insurance to achieve social purposes may be the main reason for government insurance programs [3]. Some feel that these social purposes can only be fully achieved within government-owned insurance programs. For example, rehabilitation and vocational training of injured workers are important goals of a workers compensation

system and requirements for loss mitigation in catastrophe insurance plans may be more easily accomplished under government insurance programs. Can private insurance programs accomplish the same goals? If Social Security benefits were made available through a welfare program for the truly needy elderly and disabled while pension plans, 401(k)s, life insurance and disability insurance were to be used to fill the needs of others, would adequate protection for retirement and the disabled be available? If building codes and zoning requirements could be altered to prevent construction in flood-prone areas would private insurers be willing to provide flood coverage? In this scenario, government flood insurance would still be needed for existing buildings in the flood zones, but the need for government flood insurance on new construction would be reduced.

Level of Government

The government (either state or federal) can be involved in three levels as either exclusive insurer, partner with private insurers or as a competitor to private insurers.
As an exclusive insurer the government functions as a primary insurer by collecting premiums, providing coverage and paying all claims and expenses. An example of this at the federal level is Social Security and at the state level with some state government-run workers compensation programs.

In partnership with private insurers the government offers reinsurance coverage on specific loss exposures for which the private insurer may retain only a portion of the loss. Examples of this at the federal level are National Flood insurance program, Terrorism Risk Insurance Program and Federal Crop insurance. On the state level this includes several programs to address residual markets where the insured cannot find coverage on the open market. Examples of this are Fair Access to Insurance Requirements (FAIR) plan, Workers Compensation, Windstorm plans and Residual Auto Plans.

In some cases the states operate in direct competition to private insurers such as in the Workers Compensation market in some states.

Detail of the various government insurance plans are provided in this document or in other readings on the Syllabus.

Evaluation of Government Insurance Programs

How well have the federal and state governments performed in providing insurance? According to Greene [2] the questions to be asked are:

- Is the provision of the insurance by the government necessary or does it achieve a social purpose that cannot be provided by private insurance?
- Is it insurance or a social welfare program? Social welfare is designed to provide benefits to qualified people based on demonstrable need for assistance without any payment or contribution by those receiving assistance. These benefits are usually

financed by general tax resources. The public welfare programs are an example of social welfare.

- Is the program efficient, is it accepted by the public?

Based on experience in 2004, 2005 and 2012 how is the Federal Flood Insurance Program performing? The rates don't seem to be actuarially sound; insurance is usually only purchased if required by law or mortgage companies; people who do not buy flood insurance seem to be getting federal disaster assistance. With appropriate rates, enforceable building codes, up-to-date flood maps, and available reinsurance could private insurance companies provide flood insurance?

In the following sections, we will discuss several government insurance programs, how they work, their origin and purpose, and their effectiveness.

CROP INSURANCE

To help farmers recover from the Great Depression and the Dust Bowl, in 1938 the federal government created the Federal Crop Insurance Corporation (FCIC), a wholly owned corporation of the U.S. Department of Agriculture (USDA), to oversee the newly created federal crop insurance program. The initial program, intended to provide farmers protection against low yields, was limited to a few major crops (wheat and corn) in the main producing areas [4] and was not successful due to high costs and low participation by farmers [5]. In 1980, Congress passed legislation that expanded the types of crops covered and the regions of the country in which the federal crop insurance was available. To encourage participation the 1980 Federal Crop Insurance Act also authorized a subsidy of the crop insurance premium. According to the Congressional Research Service, in 2014 farmers paid about 38 percent of the policy premium [6].

In the late 1980's and early 1990's, droughts, and wet and cool growing seasons resulted in Congress passing several disaster bills to assist farmers in recovering from these disasters. These disaster bills were still costly and competed with the insurance program, so in 1994, Congress made participation in the crop insurance program mandatory for farmers to be eligible for payments under price support programs, certain loans and other benefits. In addition, catastrophic coverage became available and the premium for this coverage was completely subsidized.

In 1994, the mandatory participation requirement was repealed, but farmers who accepted other types of benefits were required to purchase crop insurance. Participation in the crop insurance program increased significantly.

Multiple Peril Crop Insurance policies are a public-private partnership. Private insurers market and write crop insurance policies, which generally indemnify farmers if yields fall below a given baseline due to natural causes (drought, heat, cold, fire, wind, or flood). Some policies also provide protection if prices fall below a given level. The RMA sets

the rates for these policies and determines which crops can be insured in different parts of the country. The private insurer services the policies including adjusting and settling any claims resulting from the policies. The RMA acts as a reinsurer, reimbursing the participating insurers for losses in return for a portion of the premium. In addition, the federal government reimburses the private insurance companies for their operating and administrative costs. The premiums paid by farmers are subsidized by the federal government to reduce the cost to farmers and encourage farmers to participate in the program.

A farmer must elect to purchase multi-peril coverage prior to planting. The crop insurance subsidies may encourage farmers to purchase more coverage than they might if they paid the full price. A higher participation in the program provides better protection to farmers and may reduce requests for disaster assistance, but it also increases costs to taxpayers.

The Federal crop insurance program differs from most private insurance programs in that an insurer who participates in the Federal program must sell the coverage to any farmer at the rate set by the Federal government. Because the insurer cannot impose its own underwriting standards, judgment or desired rate level regardless of the risk, the risk sharing agreement between the federal government and insurance companies allows an insurer to transfer some liability associated with riskier policies to the government and retain profits or losses on less risky policies.

Some private insurers offer crop-hail insurance which is not part of the federal program. Unlike the multi-peril coverage, a crop-hail policy may be purchased at any time during the growing season. Many farmers purchase this coverage because hail can totally destroy a planted field.

Crop insurance is not mandatory. Farmers may choose whether to buy it, and for which crops. However, the RMA requires that if a farmer chooses to insure a particular field, he or she must insure *all* of his or her fields growing the same crop in the same county. This alleviates problems of adverse selection, since otherwise farmers would insure only their most loss-prone locations and the program would bear a higher loss ratio. In addition, farmers who choose to forego crop insurance are not eligible for payments for crop loss from federal disaster relief programs.

Supporters of federally backed crop insurance argue that it is necessary to bring stability to a very volatile but important sector of the American economy. Private crop insurance would definitely be more expensive (if the subsidy were removed), and might be substantially more expensive or even unavailable due to the risk of catastrophic losses over a large geographic region. Opponents have charged that crop insurance subsidies encourage agricultural over-production and encourage farming in marginal and disaster-prone areas, which harms the environment and increases general disaster relief costs.

WORKERS COMPENSATION INSURANCE

With the advent of the industrial revolution, new technology and machinery resulted in more industrial accidents. The only recourse an injured worker had was to sue their employer - a long, expensive process with an uncertain outcome. Workers compensation benefits evolved as a means by which employees injured on the job would be certain to have their injuries adequately taken care of by their employer without having to sue. Employers, as well as employees, benefited from the new system as the employer also exchanged an uncertain, potentially large payment, for a certain guaranteed benefit system.

Governments, both state and federal, participate in workers compensation insurance programs in a variety of ways. In some states, workers compensation insurance is only available through private insurance companies, while in other states it is only available from a state fund (an entity established by law to provide workers compensation insurance.) In some states, a state fund may compete with private insurers. In all states, government and private insurers cooperate in providing workers compensation insurance as the benefits are defined by law, either state or federal, and unless there is an exclusive state fund, private insurers provide the insurance coverage.

Workers compensation programs covering most employees are enacted and administered at the state level in all fifty states, the District of Columbia and the five U.S. territories. Federal government employees and certain categories of workers, such as longshoremen or railroad workers, are covered by federal workers compensation programs.

A) Federal Workers Compensation Programs

Various federal programs compensate certain categories of workers for disabilities caused on the job and provide benefits to dependents of workers who die of work-related causes. The federal government works to ensure these programs perform well under the U.S. Office of Management and Budget and Federal Agencies. The following are some major federal programs:

1) The **Federal Employee Compensation Act (FECA)** provides compensation benefits to non-military, federal employees for disability due to personal injury sustained while in the performance of duty and for employment-related disease. It is administered by the Office of Workers' Compensation Programs (OWCP) in the U.S. Department of Labor.

The Act is the exclusive remedy for federal civilian employees who suffer occupational injury or illness. There is some claimant overlap with other federal programs; however, regulations generally bar the receipt of dual benefits for the same injury/illness and mandate the reduction in benefits to offset other sources of compensation.

The program's purpose is to return individuals to work while containing the costs of the system. Designed as a non-adversarial system (i.e., no judicial review and limited

employer ability to contest claims) the program limits administrative and litigation costs, which may account for a substantial share of payout in some systems.

2) The **Longshore and Harbor Workers' Compensation Act of 1927** requires employers to provide workers compensation protection for longshore, harbor, and other maritime workers who are injured or suffer occupational diseases while working on or near navigable water in the United States. These benefits are provided by employers by either procuring insurance coverage from private insurers or by qualifying to self-insure. In some special circumstances, such as second injuries or default in payment of claims by insurers or employers, benefits are paid by a special fund administered by the Department of Labor Employment Standards Administration, Division of Longshore and Harbor Workers' Compensation (DLHWC). The DLHWC is responsible for adjudicating disputed claims and ensuring that employers and carriers pay benefits.

The Act was created to provide workers' compensation coverage for categories of workers who were not seamen and were injured while working on or near navigable water in the United States and for which no state act coverage applied. Since the enactment of the Act, there have been questions regarding when coverage under the Act ends and state act coverage begins, particularly when the injury occurs "near" navigable water. In 1984 the scope of the program was amended in an attempt to clarify the extent to which shoreside coverage applied. However, about 40 states allow concurrent receipt of state and longshore benefits. The Act provides for the offset of compensation paid to individuals under any other workers compensation law for the same disability or death. The possibility of an injured worker pursuing either longshore benefits or state act benefits is an issue that employers need to be aware of so that they have adequate insurance protection for their exposure.

3) The **Black Lung Benefits Act** (BLBA) provides wage-replacement and medical benefits to coal miners who are totally disabled due to pneumoconiosis (black lung disease) and to eligible survivors.

The program was established in 1969 out of concern that black lung victims were not receiving adequate recompense from state workers compensation systems. States have sometimes been slow to recognize chronic occupational diseases such as black lung as compensable injuries. Coal miners frequently change employment, which made it difficult to assign responsibility for a chronic disease to a particular employer. In addition, the BLBA acts as a form of disability insurance, providing compensation to survivors and dependents over and above medical care and loss of earnings. Black lung victims do remain eligible for ordinary workers compensation benefits, but if an individual receives both state and federal benefits, the federal benefit is reduced by the full amount of the state benefit.

Federal benefits are paid by the Black Lung Trust Fund which is financed by coal mine operators through a federal excise tax. In years when payouts exceed revenues, the fund borrows from general government revenue. These deficits are intended to eventually be

paid back with interest. In 2008, however, the Trust Fund deficit had grown so large that Congress made a one-time appropriation to reduce the deficit out of general funds. The hope as of 2016 is that the deficit will eventually be paid down without further excise tax increases or appropriations from general revenue.

B) State Workers Compensation Programs

The state government can act as a partner with private insurers, a competitor of private insurers, or an exclusive insurer.

Partnership with Private Insurers

State programs vary concerning who is allowed to provide insurance, which injuries or illnesses are compensable, and the level of benefits. State laws prescribe workers compensation benefits, but these laws assign to employers the responsibility for providing benefits. Employers can obtain workers compensation coverage to provide benefits to their employees by purchasing insurance from a private carrier or a state workers compensation fund, depending upon the options available in their state. They can also use self-insurance in almost every state if they demonstrate the financial capacity to do so by meeting certain requirements.

Private insurers are allowed to sell workers compensation insurance in all but a few states and territories that have exclusive state funds. Where private insurers may sell workers compensation, a public-private partnership exists since the benefits are established by state law, but insuring those benefits is the role of private insurers.

State Funds

With enactment of state workers compensation laws, the need for workers compensation insurance created its own set of problems, while solving others. Employers feared they would be forced out of business if refused coverage by insurance companies. They were also fearful that insurance carriers might impose excessive premium rates that would be a financial burden. High premium rates could negatively affect a state's economy and ultimately limit opportunities for employment. Another fear was that because the mandatory nature of the coverage reduces elasticity of demand, insurance rates might soar, enabling insurers to reap unfair profits. Some state legislators addressed these concerns by establishing state workers compensation insurance funds to provide a stable source of affordable insurance coverage.

Washington was the first state to adopt the state fund approach in 1911 and by the end of 1916, thirteen states had established state funds. As of 2016, a total of twenty- three states have state funds that provide workers compensation insurance [7].

In general, state funds are established by an act of the state legislature, have at least part of their board appointed by the governor, are usually exempt from federal taxes, and typically serve as the insurer of last resort – that is, they do not deny insurance coverage to employers who have difficulty purchasing it privately.

Among the twenty-three states that have state workers compensation funds, four have exclusive state funds and nineteen have competitive state funds. The four states with exclusive funds are North Dakota, Ohio, Washington and Wyoming. The South Carolina state fund is a hybrid; it is an exclusive insurer for state employees and is available to cities and counties to insure their employees, but it does not insure private employers.

Competitive State Funds

In states with competitive state funds [8], state funds sell workers compensation insurance, at least theoretically, in competition with private insurers in insuring and administrating the workers compensation laws. In some states, Oklahoma is one example, the state fund is not permitted to refuse coverage to an employer, no matter how undesirable the risk, so long as past and current premiums are paid. In this regard they are referred to as "insurers of last resort". In other states such as Oregon, the state fund does not operate as the insurer of last resort. The mission of the state fund is set out in the Oregon statute that authorizes the existence of the state fund. This mission is to "make insurance available to as many Oregon employers as inexpensively as may be consistent" with protecting the integrity of the Industrial Accident Fund and sound principle of insurance [9].

Exclusive State Funds

In states with exclusive state funds, private insurers are not permitted to provide workers compensation insurance and state funds enjoy the exclusive right to sell workers compensation insurance. All employers are required to procure their workers compensation insurance from the state fund, or, in some jurisdictions, an employer may also self-insure.

Residual Markets

In states without a state fund, or with a state fund that does not serve as an "insurer of last resort", it will sometimes happen that an applicant for workers compensation insurance is unable to obtain coverage. Private carriers are limited by regulation in the rates that they can charge. If they believe that the maximum rate will be inadequate for a particular insured, they simply decline to write the policy. This may be because the prospective insured has an inherently hazardous business model, or poor safety practices, or a poor or inadequate loss record.

If states took no action on behalf of such applicants, the applicants would have little choice but to go out of business. This would increase unemployment and impair tax revenues. As a result states without state funds have set up residual market mechanisms to act as insurers of last resort.

The details of this mechanism vary from state to state. Applicants generally enter the residual market after being declined by at least two private carriers. In some states such applicants are assigned to carriers based on their workers compensation market share, with the carriers writing policies and collecting premium and paying claims just as if they were serving the applicants voluntarily.

In other states, carriers reinsure undesirable applicants via a reinsurance pool, and profits or losses from the pool are shared among carriers in proportion to market share. In still other states, the state authorizes a Joint Underwriting Association to serve the residual market, and with carriers sharing on a pro-rata basis profit or loss. Note that these residual market mechanisms closely parallel the automobile liability residual market mechanisms described by Cook [10].

The market share within the residual market varies from state to state and year to year, depending on filed rate adequacy and the risk appetites of insurers. In 2014 the aggregate residual market share was about 8% within the states for which the National Council on Compensation Insurance (NCCI) collects data. The combined ratio for residual market business, over the last several years, has been running between 105% and 115% [11]. As one would expect, residual market business is generally written at a loss despite generally higher rate levels for residual market risks. This results in a higher combined ratio for workers compensation insurers, either directly as residual risks are assigned to carriers, or indirectly as reinsurance or JUA losses are pro-rated. The voluntary market effectively subsidizes the higher-risk residual market, despite higher rate levels for residual market risks.

C) Evaluation of Workers Compensation Insurance

Private carriers remain the largest source of workers compensation benefits. In 2013, they accounted for 56% of benefits paid in the nation, with state funds at 15%, self-insurers at 23%, and the federal government at 6% [12]. The trend in the share of benefits paid by state funds has decreased in recent years, down from 20% in 2004.

Nevertheless, the state funds have created significant competition in the workers compensation insurance business in the states where they operate. State funds have a significant market share in virtually every state where they are located. In 2013, state fund market share (as measured by benefits paid) in competitive state ranged from 7% in Pennsylvania to 59% in Idaho [12].
Proponents of state funds argue that because the state funds are specialists in workers compensation they can be expected to offer more intensive levels of rehabilitation and

other services than some private insurers whose workers compensation plan is only one of several types of coverage offered. However, there are private insurers who also specialize in providing only workers compensation coverage and may offer the same level of service and expertise as the state funds.

State funds are, by law, designed to be self-supporting from their premium and investment revenue. Overhead expense ratios of both exclusive and competitive funds may be lower than expense factors for private carriers in part because of absence of some administrative costs such as agency commissions and other marketing costs. As nonprofit departments of the state, or as independent nonprofit companies, they are able to return dividends or safety refunds to their policyholders, just as some private insurers do. This further reduces the overall cost of workers compensation insurance both for the state fund as well as the private insurer that offers these types of programs [2] [3]. While lower administrative costs for state funds may reduce the cost of providing workers compensation coverage, the fact that more states have not created state funds, and some state funds have been privatized recently, suggests that private insurers are also able to provide this coverage in an efficient manner.

The evidence suggests that both state funds and private insurers are able to provide workers compensation coverage in an efficient manner.

D) Interaction of Workers Compensation Insurance with Medicare

Background

In 1965, Congress created the Medicare program to provide health insurance for elderly Americans. The authors of the law creating Medicare recognized that it might overlap with other private or government insurance programs—especially workers compensation insurance.

For example, a 67-year-old worker might be injured in a job accident. That worker would be entitled to have his or her medical costs reimbursed by his or her employer's workers compensation insurer. However, that worker, being more than 65 years of age, might also be eligible for Medicare. To save Medicare costs, Congress therefore stipulated that workers compensation insurance would be primary in such a case. Medicare would be secondary and would begin to pay only if and when workers compensation benefits were exhausted.

In 1980, Congress passed the Medicare Secondary Payer Act, which stipulated that Medicare was also secondary to liability insurance. For example, if an elderly American were injured by another driver in an auto accident, the responsible driver's insurance would be primary and Medicare secondary.

The 1980 act also introduced the notion of a "conditional payment". In many cases persons begin incurring medical costs before eligibility to collect insurance has been

determined. In such cases Medicare will make "conditional payments" to medical providers, subject to later reimbursement by an insurer subsequently determined to be primary.

In some cases workers compensation claims are closed via a settlement which provides compensation to the injured worker for anticipated *future* medical payments. These payments can also overlap with Medicare. For example, a 63-year-old worker may be injured on the job. That worker is not eligible for Medicare. However, the worker's claim may be closed with a settlement that allows for medical treatment anticipated to last five years. By the end of that time the worker will be Medicare-eligible.

Federal regulators therefore introduced (1989) the Medicare Set-Aside Allocation (MSA), in which all parties to a settlement would agree to "set aside" a portion of the workers' compensation or liability settlement to be used to pay for future medical costs related to the workers' compensation or liability injury. The MSA funds are primary over Medicare and are limited to services that are related to the injury that would be covered by Medicare after the injured party becomes Medicare eligible.

Despite these laws and regulations, the status of Medicare as secondary insurer remained mostly notional through the Twentieth Century. Medicare administrators simply did not know when Medicare eligible (or soon to be eligible) parties were collecting workers compensation or liability payments. In the absence of aggressive collection, parties had little incentive to agree to MSA's.

Medicare Set-Aside Allocations since 2001

This became increasingly untenable as Medicare costs rose due to medical cost inflation and longer life expectancy. In 2001 the Center for Medicare and Medicaid Services (CMS), which administers Medicare, established its first guidelines for the review and approval of MSA's. The implied threat was that, where MSA's were not submitted, or not approved, Medicare would refuse payment for future care, and be more aggressive in seeking reimbursement for past conditional payments.

Since 2001, the submission and approval process for MSAs has changed several times. The changes have generally been in the direction of making MSA approval more difficult. A new sub-industry of MSA consultants has emerged to assist Third Party Administrators and insurers to evaluate settlements for MSA requirements and gain the approval of CMS.

As of 2012, CMS will review all workers compensation MSA's where:

- The claimant is either a Medicare beneficiary and the settlement is greater than $25,000 or
- The claimant is expected to be Medicare eligible within 30 months of the settlement and the settlement or expected future medical costs and lost wages of the injury exceeds $250,000.

The CMS thresholds do not create a safe-harbor, so even smaller medical settlements should consider Medicare's interests.

In 2016, the CMS announced that it will also begin reviewing liability and no-fault insurance MSA's.

After an MSA is approved, the injured worker must comply with reporting requirements and use the MSA appropriately. Claimants must agree to pay their workers compensation-related medical bills, using an interest-bearing account, and to complete reporting of their payments before Medicare will make any payments for claim-related conditions.

CMS can reject or revise MSA proposals, increasing the estimated lifetime medical need, to assure that Medicare rarely becomes liable for claim-related expenses throughout the claimant's life. Two specific issues – pharmacy costs and life expectancy – are often cited as areas of concern. With Medicare Part D, pharmacy costs were added to Medicare. In 2009, CMS issued pharmacy guidelines for MSAs, which essentially priced drugs at the retail cost level without regard to negotiated price arrangements that the insurer may have. However, many drugs commonly used for pain management are not included in Medicare Part D.

Due to industry concerns [13], in May 2010 Medicare issued clarifying language that drugs which were not included in Medicare Part D did not need to be considered in a MSA. This reduced the prescription costs in MSAs and was hailed as a significant victory in the insurance industry.

Another issue which can raise the costs of a MSA is use of a "rated age" or impaired life expectancy versus the claimant's actual age. If a rated age is used, that means the injured person's life expectancy is less than normal which allows the settlement amount to be less than would be needed for an individual with a normal life expectancy. If CMS protocols for rated ages are not followed, CMS will recalculate the MSA using the claimant's actual age rather than the impaired life expectancy. Due to the nuances of CMS approval, many insurers use specialists to review their MSA proposals prior to submission to CMS and to shepherd the claim through the process. Use of specialists increases the administrative costs of settling such claims.

New Reporting Requirements since 2007

On December 29, 2007, President George W. Bush signed the "Medicare, Medicaid and SCHIP Extension Act of 2007" (MMSEA). This law sought to address the problem of CMS being unaware of primary payer responsibilities, whether or not a claim involved an MSA. The law requires claim payers, known as Responsible Reporting Entities (RREs), to report claim data to the CMS. Specifically, Section 111 of the act requires the providers of liability insurance (including self-insurers), no fault insurance and workers' compensation insurance (hereinafter "insurers") to determine the Medicare-enrollment

status of all claimants and report certain information about those claims to the Secretary of Health and Human Services, through the CMS.

The implementation of the reporting requirement was delayed, as regulations and technology issues were ironed out, but reporting became mandatory on January 1, 2011 for insurers with workers' compensation claims. Reporting of liability claims was phased in (with the largest claims first) beginning on January 1, 2012.

CMS uses the Section 111 data to assist Medicare in coordinating benefits and in uncovering potentially reimbursable claims. There are substantial penalties for non-compliance with the required reporting of claims - $1,000 per day per beneficiary for each day the insurer is out of compliance. This penalty is in addition to a "Double Damages Plus Interest" penalty that defendants (as primary payers) can be fined if Medicare's right to reimbursement is ignored in any settlement. This rule applies to settlements on or after October 1, 2010.

Property/Casualty Actuarial Implications of the Recent Changes

From 2008 through 2010 there may have been an increase in claim closings, lump-sum payments or settlement in advance of the Section 111 reporting deadline. Some RREs may have taken the opportunity to decrease the volume of relatively minor claims that would otherwise need to have the Medicare eligibility status of the claimant determined and reports made to CMS. For actuaries reviewing both insurers' and self-insurers' loss data, such claim activity can distort both paid and reported losses.

Slowdowns in claim settlement rates are sometimes attributed by Workers Compensation claims professionals to the CMS changes in procedures and increased emphasis on MSAs. CMS approval of MSAs generally takes 60 to 90 days, which can contribute to a slowdown in settlements. It is possible that some portion of increasing WC medical trends is due to MSAs. In the past, claim settlements may not have specifically identified medical vs. indemnity components and the settlement costs may have been entirely attributed to indemnity. With MSAs, a clear portion of the settlement is identified as medical cost, and the CMS procedures may also have increased the average size of the settlements due to future medical considerations. However, to date there are no publicly available studies to quantify the impact on overall costs or severity trends.

In addition, for some entities, a significant risk factor could be that some injured workers currently receiving Medicare payments should be classified as workers compensation claims. The Section 111 reporting could uncover Medicare payments that should shift to workers compensation claims, causing actuarial estimates to increase as CMS files liens to recover payments. Over the last three years *before* claim reporting was required, the number of recovery demands from CMS increased significantly to 74,000 in 2010 from 43,000 in 2007 [14]. The number may continue increasing after 2011, or it may spike and then settle down as CMS catches up. Note that recovery can affect claims that were open in prior years, even if they are closed now.

Successful recoveries naturally increase claim severity to an insurer. The General Accounting Office (GAO) estimates total saving due to Medicare claim denials and recovery of payments of $737 million in 2008, rising to $861 million in 2011. These are costs that are borne by insurers instead of Medicare. Furthermore the GAO notes that "(A)n accurate estimate of savings could take years to determine because of the time lag between initial notification of Medicare Secondary Payer situations and recovery, the fact that not all situations result in recoveries, and the fact that mandatory reporting is still being phased in." [15]

In 2012, new legislation affecting the interaction of Medicare and private property-casualty insurance was passed. A key provision of the Strengthening Medicare and Repaying Taxpayers Act, or SMART Act, was the implementation of a 3-year statute of limitations on Medicare conditional payment recovery. This provision became effective on July 10, 2013 and provides that an action by the federal government for recovery must be filed no later than 3 years after the date of the receipt of notice of a settlement, judgment, award, or other payment.

While the statute does not define how notice of the settlement, judgment, award or other payment is to be made to Medicare, the provision was put in place with the understanding that notice would be through Section 111 Mandatory Insurer Reporting. It is unclear then whether other types of "non-Section 111 Mandatory insurer Reporting" to Medicare will trigger the limitations period, or whether the statute of limitations will be effective in curtailing increased workers compensation claims should Medicare not cover certain claims.

Changes in the Future?

Section 111 reporting is in its infancy. It is uncertain how CMS will use the huge volume of data that it is collecting, whether this will lead to a significant further increase in set-asides or recovery demands, and whether the statute of limitations will temper claim volume. It may take years for changes to be fully apparent, especially for liability lines for which mandatory reporting didn't begin until 2012 and will be phased in.

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Private Flood Insurance and the National Flood Insurance Program

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CRS REPORT
Prepared for Members and
Committees of Congress

Summary

The National Flood Insurance Program (NFIP) is the main source of primary flood insurance coverage in the United States, collecting over $4.6 billion in premiums, fees, and surcharges for over five million flood insurance policies. This is in contrast to the majority of other property and casualty risks, such as damage from fire or accidents, which are covered by a broad array of private insurance companies. One of the primary reasons behind the creation of the NFIP in 1968 was the withdrawal by private insurers from providing flood insurance coverage, leaving flood victims largely reliant on federal disaster assistance to recover after a flood. While private insurers have taken on relatively little flood risk, they have been involved in the administration of the NFIP through sales and servicing of policies and claims.

In recent years, private insurers have expressed increased interest in providing flood coverage. Advances in the analytics and data used to quantify flood risk along with increases in capital market capacities may allow private insurers to take on flood risks that they shunned in the past. Private flood insurance may offer some advantages over the NFIP, including more flexible flood polices, integrated coverage with homeowners insurance, or lower-cost coverage for some consumers. Private marketing might also increase the overall amount of flood coverage purchased, reducing the amount of extraordinary disaster assistance necessary to be provided by the federal government. Increased private coverage could reduce the overall financial risk to the NFIP, reducing the amount of NFIP borrowing necessary after major disasters.

Increasing private insurance, however, may have some downsides compared to the NFIP. Private coverage would not be guaranteed to be available to all floodplain residents, unlike the NFIP, and consumer protections could vary in different states. The role of the NFIP has historically been broader than just providing insurance. As currently authorized, the NFIP also encompasses social goals to provide flood insurance in flood-prone areas to property owners who otherwise would not be able to obtain it, and to reduce government's cost after floods. Through flood mapping and mitigation efforts, the NFIP has tried to reduce the future impact of floods, and it is unclear how effectively the NFIP could play this broader role if private insurance became a large part of the flood marketplace. Increased private insurance could also have an impact on the subsidies that are provided for some consumers through the NFIP.

The 2012 reauthorization of the NFIP (Division F, Title II of P.L. 112-141) included provisions encouraging private flood insurance; however, various barriers have remained. Legislation passed the House in the 114th Congress (H.R. 2901) and 115th Congress (H.R. 2874) which would have attempted to expand the role of private flood insurance; neither bill was taken up by the Senate. In the 116th Congress, no NFIP legislation advanced past introduction. Two bills have been introduced in the 117th Congress for long-term reauthorization and reform of the NFIP.

The NFIP is currently operating under a short-term reauthorization until February 18, 2022.

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Introduction

Congress is currently considering long-term reauthorization of the National Flood Insurance Program (NFIP). Floods are the most common natural disaster in the United States, and all 50 states, plus DC, Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, and the Northern Mariana Islands have experienced flood events since May 2018.[1] The NFIP has paid a total of nearly $19.03 billion in claims over the past five fiscal years.[2]

Expanding the role of private insurers, including reinsurers, has been seen by many as an answer to the variability of the financial position of the NFIP.[3] Increasing participation by private insurers could transfer more flood risk from policyholders to the private insurance sector, as opposed to transferring the risk to the federal government through the NFIP. In addition to the possible advantage to the NFIP, the increased availability of flood insurance as private companies enter the market may benefit households and businesses, as insured flood victims are likely to recover more quickly and more fully after a flood.

Private insurer interest in directly providing and underwriting flood risk has increased in recent years. Advances in the analytics and data used to quantify flood risk along with increases in capital market capacities may allow private insurers to take on flood risks that they shunned in the past. However, increasing the private sector role in providing flood insurance coverage directly to consumers may have implications for the operations and fiscal solvency of the NFIP as currently structured. Increased access to private flood insurance could provide individual policyholders with a wider choice of coverage and possibly cheaper premiums, but may also lead to variable consumer protections.

The extent to which private insurance companies participate in the U.S. flood insurance market represents an area of congressional concern. A number of bills have been introduced to address issues related to private flood insurance, but no legislation has yet been enacted. The NFIP is currently operating under its 18th short-term reauthorization, until February 18, 2022.[4]

This report describes the current role of private insurers in U.S. flood insurance, and discusses barriers to private sector involvement. The report considers potential effects of increased private sector involvement in the U.S. flood market, both for the NFIP and for consumers. Finally, the report outlines the provisions relevant to private flood insurance in House and Senate NFIP reauthorization bills from the 115th, 116th, and 117th Congresses.

Background[5]

The NFIP is the main provider of primary flood insurance coverage for residential properties in the United States, providing nearly $1.3 trillion in coverage for over five million residential flood insurance policies. In FY2018, the program collected about $3.51 billion in annual premium revenue, $1.09 billion in assessments, fees, and surcharges and $1.04 billion in payments from

[1] Email correspondence from FEMA Congressional Affairs staff, August 5, 2019.

[2] Email correspondence from FEMA Congressional Affairs staff, December 30, 2020.

[3] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 41.

[4] P.L. 117-70.

[5] For more detail on the NFIP, see CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel.

private reinsurers.[6] In FY2019, the program collected about $3.39 billion in annual premium revenue and $1.07 billion in assessments, fees, and surcharge, with no payments from private reinsurers.[7] In FY2020, the program collected about $3.51 billion in annual premium revenue and $1.11 billion in assessments, fees, and surcharge, with no payments from private reinsurers.

Nationally, over 22,000 communities participate in the NFIP.[8] The role of the federal government in flood insurance is in contrast to the majority of other property and casualty risks, such as damage from fire or accidents, which are covered by a broad array of private insurance companies. Total direct written premiums for private flood insurance in 2019 totaled $523 billion, compared to $420 million in 2018 and $390 million in 2017. Over 140 insurers wrote private flood insurance in 2019, up from 120 insurers in 2018, 90 insurers in 2017, and 50 insurers in 2016.[9] Total premiums for private property and casualty insurance in 2018 totaled $611 billion, with the policies backed by over $2 trillion in assets held by private insurers.[10]

Objectives of the NFIP

The NFIP has two main policy goals: (1) to provide access to primary flood insurance, thereby allowing for the transfer of some of the financial risk of property owners to the federal government; and (2) to mitigate and reduce the nation's comprehensive flood risk[11] through the development and implementation of floodplain management standards. A longer-term objective of the NFIP is to reduce federal expenditure on disaster assistance after floods.

As a public insurance program, the NFIP is designed differently from the way in which private-sector companies provide insurance. As currently authorized, the NFIP also encompasses social goals to provide flood insurance in flood-prone areas to property owners who otherwise would not be able to obtain it, and to reduce the government's cost after floods.[12] The NFIP also engages in many "non-insurance" activities in the public interest: it disseminates flood risk information through flood maps, requires communities to adopt land use and building code standards in order to participate in the program, potentially reduces the need for other post-flood disaster aid, contributes to community resilience by providing a mechanism to fund rebuilding after a flood, and may protect lending institutions against mortgage defaults due to uninsured losses. The benefits of such tasks are not directly measured in the NFIP's financial results from selling flood insurance.[13]

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[6] Statistics on the National Flood Insurance Program (NFIP) policy and claims are available from the Federal Emergency Management Agency (FEMA) website "Policy and Claim Statistics for Flood Insurance," at https://www.fema.gov/policy-claim-statistics-flood-insurance; premium and fee data from *The Watermark Third Quarter 2021*, https://www.fema.gov/sites/default/files/documents/fema_fima-watermark-FY2021-Q3.pdf.

[7] Fee data from *The Watermark Third Quarter 2021*, https://www.fema.gov/sites/default/files/documents/fema_fima-watermark-FY2021-Q3.pdf.

[8] Detailed information about which communities participate and where is available from the Community Status Book, found on FEMA's website at https://www.fema.gov/flood-insurance/work-with-nfip/community-status-book.

[9] National Association of Insurance Commissioners (NAIC), *Report on Private Flood Insurance Data*, April 28, 2020, provided by NAIC to CRS on October 24, 2020.

[10] Premium amounts used are net premiums written and asset amounts are admitted assets from A.M. Best, *2019 Best's Rankings: U.S. Property/Casualty - 2018 Financial Results*, March 25, 2019.

[11] In the context of this report, *comprehensive* flood risk means that the risk includes both financial risk (i.e., physical damage to property), and also the risk to human life.

[12] See 82 Stat. 573 for text in original statute (Section 1302(c) of P.L. 90-448). This language remains in statute (see 42 U.S.C. §4001(c)).

[13] American Academy of Actuaries Flood Insurance Work Group, *The National Flood Insurance Program: Challenges*

From the inception of the NFIP, the program has been expected to achieve multiple objectives, some of which may conflict with one another:

- To ensure reasonable insurance premiums for all;
- To have risk-based premiums that would make people aware of and bear the cost of their floodplain location choices;
- To secure widespread community participation in the NFIP and substantial numbers of insurance policy purchases by property owners; and
- To earn premium and fee income that, over time, covers claims paid and program expenses.[14]

Primary Flood Insurance Through the NFIP

The NFIP offers flood insurance to anyone in a community that chooses to participate in the program. Flood insurance purchase generally is voluntary, except for property owners who are in a Special Flood Hazard Area (SFHA)[15] and whose mortgage is backed by the federal government.[16] Flood insurance policies through the NFIP are sold only in participating communities and are offered to both property owners and renters and to residential and non-residential properties. NFIP policies have relatively low coverage limits, particularly for non-residential properties or properties in high-cost areas. The maximum coverage for single-family dwellings (which also includes single-family residential units within a 2-4 family building) is $100,000 for contents and up to $250,000 for building coverage. The maximum available coverage limit for other residential buildings is $500,000 for building coverage and $100,000 for contents coverage, and the maximum coverage limit for non-residential business buildings is $500,000 for building coverage and $500,000 for contents coverage.

The Mandatory Purchase Requirement

By law and regulation, federal agencies, federally regulated lending institutions, and government-sponsored enterprises (GSEs)[17] must require the property owners in an SFHA to purchase flood insurance as a condition of any mortgage that these entities make, guarantee, or purchase.[18] In addition to this legal mandatory purchase requirement, lenders may also require borrowers outside of an SFHA to maintain flood insurance as a means of financially securing the property.

In order to comply with this mandate, property owners may purchase flood insurance through the NFIP, or through a private company, so long as the private flood insurance "provides flood

and Solutions, April 2017, p. 79, http://www.actuary.org/files/publications/FloodMonograph.04192017.pdf.

[14] National Research Council of the National Academies, *Affordability of National Flood Insurance Program Premiums: Report 1*, 2015, p. 3, http://www.nap.edu/catalog/21709/affordability-of-national-flood-insurance-program-premiums-report-1.

[15] A Special Flood Hazard Area (SFHA) is defined by FEMA as an area with a 1% or greater risk of flooding every year.

[16] This includes mortgages from banks insured by the Federal Deposit Insurance Corporation and mortgages backed by Fannie Mae or Freddie Mac, as well as federal entities such as the Federal Housing Administration and the Department of Veterans Affairs.

[17] Government-Sponsored Enterprises (GSEs) are private companies with congressional charters. Examples of GSEs providing mortgages that would be affected by the mandatory purchase requirement include the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae).

[18] 42 U.S.C. §4012a.

insurance coverage which is at least as broad as the coverage" of the NFIP, among other conditions.[19] The mandatory purchase requirement is enforced by the lender, rather than FEMA, and lenders can be fined up to $2,000 by banking regulators for each failure to require flood insurance or provide notice.[20] Property owners who do not obtain flood insurance when required may find that they are not eligible for certain types of disaster assistance after a flood.[21]

Premium Subsidies and Cross-Subsidies

Flood insurance rates in the NFIP generally are directed by statute to be "based on consideration of the risk involved and accepted actuarial principles,"[22] meaning that the rate is reflective of the true flood risk to the property. However, Congress has directed FEMA *not* to charge actuarial rates for certain categories of properties and to offer discounts to other classes of properties.[23] FEMA is not, however, provided funds to offset these subsidies and discounts,[24] which has contributed to FEMA's need to borrow from the U.S. Treasury to pay NFIP claims.

There are three main categories of properties that pay less than full risk-based rates:

- *Pre-FIRM*: properties that were built or substantially improved before December 31, 1974, or before FEMA published the first Flood Insurance Rate Map (FIRM) for their community, whichever was later;[25]
- *Newly mapped*: properties that are newly mapped into a SFHA on or after April 1, 2015, if the applicant obtains coverage that is effective within 12 months of the map revision date;[26] and
- *Grandfathered*: properties that were built in compliance with the FIRM in effect at the time of construction and are allowed to maintain their old flood insurance rate class if their property is remapped into a new flood rate class.[27]

[19] 42 U.S.C §4012a(b). For additional information on private flood insurance, see CRS Insight IN10450, *Private Flood Insurance and the National Flood Insurance Program (NFIP)*, by Baird Webel and Diane P. Horn. The "at least as broad as" requirement is discussed in more detail in the section titled "Flood Insurance Coverage "at Least as Broad as" the NFIP" in this report.

[20] 42 U.S.C §4012a(f).

[21] For additional information, see CRS Report R44808, *Federal Disaster Assistance: The National Flood Insurance Program and Other Federal Disaster Assistance Programs Available to Individuals and Households After a Flood*, by Diane P. Horn.

[22] 42 U.S.C. §4014(a)(1).

[23] For a full discussion of NFIP subsidies and cross-subsidies, see the section on Pricing and Premium Rate Structure in CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel, the section on Premiums Subsidies and Cross-Subsidies in CRS Report R46095, *The National Flood Insurance Program: Selected Issues and Legislation in the 116th Congress*, by Diane P. Horn and Baird Webel, and the section on Premium Subsidies and Cross-Subsidies in CRS Report R45999, *National Flood Insurance Program: The Current Rating Structure and Risk Rating 2.0*, by Diane P. Horn.

[24] Government Accountability Office (GAO), *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, GAO-17-425, April 2017, p. 17, https://www.gao.gov/products/GAO-17-425.

[25] 42 U.S.C. §4015(c).

[26] §6 of P.L. 113-89, 128 Stat.1028, as codified at 42 U.S.C. §4015(i).

[27] For a full description, see FEMA, *Grandfathering*, March 2020, https://www.fema.gov/node/404682.

NFIP Reauthorization and Legislation

117th Congress

The NFIP is currently authorized until February 18, 2022.[28] Since the end of FY2017, 18 short-term NFIP reauthorizations have been enacted. Two companion bills have been introduced in the 117th Congress for reform and reauthorization of the NFIP: S. 3128 and H.R. 5802, the National Flood Insurance Program Reauthorization and Reform Act of 2021. These bills have not yet been considered by the committees of jurisdiction, and will be discussed in detail in a later update of this report.

Prior Congresses

The House passed standalone legislation to encourage private insurance in the 114th Congress (H.R. 2901); however, the Senate did not take up H.R. 2901 in the 114th Congress.

In the 115th Congress, a number of bills were introduced to provide a longer-term reauthorization of the NFIP as well as make numerous other changes to the program. The House of Representatives passed H.R. 2874 (The 21st Century Flood Reform Act) by a vote of 237-189 on November 14, 2017. Among its numerous provisions, H.R. 2874 would have authorized the NFIP until September 30, 2022.

Three bills were introduced in the Senate that would have reauthorized the expiring provisions of the NFIP:

- S. 1313 (Flood Insurance Affordability and Sustainability Act of 2017);
- S. 1368 (Sustainable, Affordable, Fair, and Efficient [SAFE] National Flood Insurance Program Reauthorization Act of 2017);[29] and
- S. 1571 (National Flood Insurance Program Reauthorization Act of 2017).

None of these bills were considered by the full Senate in the 115th Congress. Among their other provisions, S. 1313 would have authorized the NFIP until September 30, 2027; S. 1368 would have authorized the NFIP until September 30, 2023; and S. 1571 would have authorized the NFIP until September 30, 2023.

The four reauthorization bills in the 115th Congress differed significantly in the degree to which they would have encouraged private participation in flood insurance, particularly flood insurance sold by private companies in competition with the NFIP. In general, legislation passed by the House was more encouraging of private flood insurance than Senate legislation. In the 115th Congress, the House included the same provisions in H.R. 2874 and in an unrelated bill to reauthorize the Federal Aviation Administration (H.R. 3823). The Senate removed the flood insurance language from H.R. 3823 before passing it. Reportedly, the provisions relating to

[28] The statute for the NFIP does not contain a comprehensive expiration, termination, or sunset provision for the whole of the program. Rather, the NFIP has multiple different legal provisions that generally tie to the expiration of key components of the program. Unless reauthorized or amended by Congress, the following will occur on February 18, 2022: (1) The authority to provide new flood insurance contracts will expire. Flood insurance contracts entered into before the expiration would continue until the end of their policy term of one year; and (2) The authority for NFIP to borrow funds from the Treasury will be reduced from $30.425 billion to $1 billion (42 U.S.C. §4016(a)). The most recent reauthorization of the NFIP is in P.L. 117-70.

[29] A similar bill was introduced in the House, H.R. 3285.

private flood insurance were a particular issue of concern.[30] The Senate ultimately did not take up H.R. 2874 during the 115th Congress. S. 1313 included some similar provisions to H.R. 2874 on private flood insurance, but S. 1368 and S. 1571 did not.

In the 116th Congress, the House Financial Services Committee completed markup of a bill for the long-term reauthorization of the NFIP, the National Flood Insurance Program Reauthorization Act of 2019 (H.R. 3167), and ordered it reported on June 12, 2019.[31] H.R. 3167 would have reauthorized the NFIP until September 30, 2024. One bill was introduced in the Senate, on July 18, 2019, to reauthorize the expiring provisions of the NFIP: the National Flood Insurance Program Reauthorization and Reform Act of 2019 (S. 2187), with a companion bill in the House, H.R. 3872.[32] The latter two bills were not considered by the committees of jurisdiction. S. 2187 and H.R. 3872 would also have reauthorized the NFIP until September 30, 2024. Details of the provisions relating to private insurance in the House and Senate bills in the 116th Congress are described in the **Appendix**, and **Table A-1** relates the provisions in the bills in the 116th Congress to the issues discussed in this report.

The Current Role of Private Insurers in the NFIP

Private insurers can be involved in the flood insurance market in a number of ways, including (1) by helping to administer the NFIP; (2) by sharing risk with the NFIP as a reinsurer; or (3) by taking on risk themselves as a primary insurer, where the insurer contracts directly with a consumer. Since 1983, private insurers have played a major role in administering the NFIP, including selling and servicing policies and adjusting claims, but they largely have not been underwriting flood risk themselves.[33] Instead, the NFIP retains the direct financial risk of paying claims for these policies. The NFIP has purchased reinsurance since 2016, thus transferring some of the flood risk to the private sector.

Servicing of Policies and Claims Management

While FEMA provides the overarching management and oversight of the NFIP, the majority of the day-to-day operation of the NFIP is handled by private companies. This includes marketing, selling and writing policies, and all aspects of claims management.[34] FEMA has established two different arrangements with private industry. The first is the Direct Servicing Agent, or DSA, which operates as a private contractor, selling NFIP policies on behalf of FEMA for individuals

[30] See, for example, Shaun Courtney, "'Hard to Envision' Senate Democrats Blocking FAA Extension, Thune Says," *Bloomberg BNA*, September 27, 2017, Daily Report for Executives,

> Thune wants to see the Senate pass the House bill under unanimous consent, but committee ranking member Bill Nelson (D-Fla.) made that sound unlikely. "That will not get passed here," Nelson said Sept. 26 in response to Bloomberg BNA's inquiry about the House's flood insurance provision.... Senator Sherrod Brown (D-Ohio), ranking member on the Banking, Housing, and Urban Affairs Committee, which has jurisdiction over flood insurance proposals, said the House provision was unacceptable. "We're not going to do it," Brown said. "This would undermine all of our flood insurance efforts. It will cause all kinds of cherry-picking by private insurance."

[31] See H.Rept. 116-262, Part 1, https://www.congress.gov/116/crpt/hrpt262/CRPT-116hrpt262.pdf.

[32] H.R. 3872 was introduced on July 22, 2019.

[33] Underwriting risk refers to the potential loss to an insurer or reinsurer. An insurer takes on this risk in return for a premium, and promises to pay an agreed amount in the event of a loss. See NAIC, *Glossary of Insurance Terms*, http://www.naic.org/consumer_glossary.htm#U.

[34] See primarily 42 U.S.C. §4081 and §4018, and 44 C.F.R. Part 62.

seeking to purchase flood insurance policies directly from the NFIP.[35] The DSA also handles the policies of severe repetitive loss properties.[36] The second arrangement is the Write-Your-Own (WYO) program, where private insurance companies are paid to issue and service NFIP policies. With either the DSA or WYO program, the NFIP retains the actual financial risk of paying claims for the policy, and the policy terms and premiums are the same. Approximately 13% of the total NFIP policy portfolio is managed through the DSA and 87% of NFIP policies are sold by the 57 companies participating in the WYO program.[37]

Companies participating in the WYO program are compensated through a variety of methods, but this compensation is not directly based on the costs incurred by the WYOs. In the Biggert-Waters Flood Insurance Reform Act of 2012 (Division F, Title II of P.L. 112-141, hereinafter BW-12), Congress required FEMA to develop and issue a rulemaking on a "methodology for determining the appropriate amounts that property and casualty insurance companies participating in the WYO program should be reimbursed for selling, writing, and servicing flood insurance policies and adjusting flood insurance claims on behalf of the National Flood Insurance Program."[38] This rulemaking was required within a year of enactment of BW-12. FEMA published an Advanced Notice of Proposed Rulemaking to revise the compensation structure of the WYOs on July 8, 2019.[39] The comment period closed on September 6, 2019. Until the analysis is complete, it is difficult to ascertain how much it actually costs WYO companies to administer the NFIP policies, or the WYO's profit margins (if any).

In the 115th Congress, H.R. 2874 would have capped the allowance paid to the WYOs at 27.9% of premiums, while S. 1368 would have capped the allowance at 22.46%.

In the 116th Congress, Section 302 of S. 2187 would have established that the total amount of reimbursement paid to WYO companies could not be greater than 22.46% of the aggregate amount of premiums charged by the company. This section would also have required FEMA to ensure that the commission paid by a WYO company to agents of the company would not be less than 15%. Section 304 of S. 2187 would require FEMA, within 12 months of enactment, to develop a schedule to determine the actual costs of WYO companies and reimburse the WYO companies only for the actual costs of the service or products. It would have required that all reimbursements made to WYO companies be made public, including a description of the product or service provided to which the reimbursement pertains. Section 405 of S. 2187 would have required FEMA to establish penalties for underpayment of claims by WYO companies that are not less than the penalty for overpayment of a claim. Both H.R. 3872 and S. 2187 contained provisions giving FEMA the authority to terminate a WYO contract under certain conditions, such as fraud or other conduct detrimental to the NFIP.

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[35] The current Direct Servicing Agent is a company called National Flood Services., who was awarded the contract in October 2020. See https://nationalfloodservices.com/press/nfs-awarded-nfip-direct-service-provider-contract/ https://content.govdelivery.com/accounts/USDHSFEMA/bulletins/1c9da05.

[36] Severe repetitive loss properties are those that have incurred four or more claim payments exceeding $5,000 each, with a cumulative amount of such payments over $20,000; or at least two claims with a cumulative total exceeding the value of the property. See 42 U.S.C. §4014(h) and 44 C.F.R. §79.2(h).

[37] Email correspondence from FEMA Congressional Affairs staff, March 1, 2019. A list of companies participating in the WYO program is available at https://nfipservices.floodsmart.gov/wyo-program-list.

[38] §100224 of P.L. 112-141, 126 Stat. 936.

[39] Federal Emergency Management Agency, "National Flood Insurance Program (NFIP); Revisions to Methodology for Payments to Write Your Own (WYO) Companies," 84(130) *Federal Register* 32,371-32,379, July 8, 2019, and Federal Emergency Management Agency, "National Flood Insurance Program (NFIP); Revisions to Methodology for Payments to Write Your Own (WYO) Companies; Correction," 84(170) *Federal Register* 45,933-45,934, September 3, 2019.

Reinsurance

In the Homeowner Flood Insurance Affordability Act of 2014 (P.L. 113-89, HFIAA), Congress revised the authority of FEMA to secure reinsurance[40] for the NFIP from the private reinsurance and capital markets.[41] The purchase of private market reinsurance reduces the likelihood of FEMA needing to borrow from the Treasury to pay claims. In addition, as the U.S. Government Accountability Office (GAO) noted, reinsurance could be beneficial because it allows FEMA to price some of its flood risk up front through the premiums it pays to the reinsurers rather than borrowing from Treasury after a flood.[42] From a risk management perspective, using reinsurance to cover losses in only the more extreme years could help the government to manage and reduce the volatility of its losses over time.

Transfer of risk to the private sector through reinsurance, however, is unlikely to lower the overall cost of the NFIP because reinsurers understandably charge FEMA premiums to compensate for the risk they assume. The primary benefit of reinsurance is to transfer and manage risk rather than to reduce the NFIP's long-term fiscal exposure.[43] For example, a reinsurance scenario which would provide the NFIP with $16.8 billion coverage (sufficient for Katrina-level losses) could cost an estimated $2.2 billion per year.[44] Such a reinsurance premium, however, would be a large portion of the total premiums paid into the NFIP, approximately two-thirds of the current premium amounts. Devoting such a large portion of premiums to reinsurance could leave insufficient funds for paying claims outside of large disasters,[45] or for covering the other purposes for NFIP funds, such as flood mitigation, mapping, and improving NFIP rating structures.

Reinsurance has been purchased by FEMA through two different mechanisms, "traditional" reinsurance and reinsurance backed by catastrophe bonds.[46] The traditional reinsurance has been purchased from a varied group of reinsurance companies with each reinsurer bearing part of the risk. The catastrophe bond reinsurance is facilitated by a single company, with the risk then transferred to capital market investors who purchase the bonds. The specifics of each reinsurance purchase has varied, but in general, the reinsurance has been designed to pay a certain percentage of the losses from a single, large scale event, with a higher percentage if losses are higher.[47] Coverage has typically started after $4 billion in losses, a loss level that has only been reached by the NFIP in three events—Hurricane Katrina, Superstorm Sandy, and Hurricane Harvey. **Table 1** outlines the various reinsurance purchases, including the dates in force, type of reinsurance, amount of coverage, premiums paid by FEMA, and claims paid to FEMA.

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[40] Reinsurance is defined as a transaction between a primary insurer and another licensed (re)insurer where the reinsurer agrees to cover all or part of the losses and/or loss adjustment expenses of the primary insurer. See NAIC, *Glossary of Insurance Terms*, http://www.naic.org/consumer_glossary.htm#R.

[41] See §10 of P.L. 113-89, 128 Stat. 1025, as codified at 42 U.S.C. §4081(e).

[42] GAO, *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, GAO-17-425, April 2017, p. 19, https://www.gao.gov/products/GAO-17-425.

[43] Ibid.

[44] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 171.

[45] The NFIP reinsurance purchases have been designed to cover claims for only one large flood, and smaller flood claims will continue to be paid from NFIP premiums.

[46] For more details see FEMA, *National Flood Insurance Program (NFIP) Reinsurance Program*, https://www.fema.gov/flood-insurance/work-with-nfip/reinsurance and CRS Insight IN10965, *The National Flood Insurance Program (NFIP), Reinsurance, and Catastrophe Bonds*, by Diane P. Horn and Baird Webel.

[47] For example, the 2020 traditional reinsurance purchase covered 10.25% of NFIP losses from $4 billion to $6 billion, 34.68% of losses from $6 billion to $8 billion, and $21.80% of losses from $8 billion to $10 billion.

In the 115th Congress, H.R. 2874, S. 1313, and S. 1571 all contained provisions that would have required or encouraged the NFIP to transfer a portion of its risk to the private reinsurance market. In the 116th Congress, H.R. 3167, Section 406, would have required FEMA annually to evaluate ceding a portion of the risk of the NFIP to the private reinsurance or capital markets, if the Administrator determines that the rates and terms are reasonable and doing so would further the development and maintenance of a sound financial framework for the NFIP. The Senate bill in the 116th Congress, S. 2187, did not contain any provisions related to reinsurance. In the 117th Congress, companion bills S. 3128 and H.R. 5802 do not contain any provisions related to reinsurance.

Table 1. NFIP Reinsurance Purchases

($ billion)

Date	Type	Coverage amount	Coverage Levels	Premiums Paid by FEMA	To Date Claims Paid to FEMA
CY2017	Traditional	$1.042	$4-8	$0.150	$1.042
CY2018	Traditional	$1.46	$4-8	$0.235	$0
August 2018-July 2021	Catastrophe Bond	$0.5	$5-10	$0.188[a]	$0
CY2019	Traditional	$1.32	$4-10	$0.186	$0
April 2019-April 2022	Catastrophe Bond	$0.3	$6-8	$0.107[b]	
CY2020	Traditional	$1.33	$4-10	$0.205	$0
February 2020-February 2023	Catastrophe Bond	$0.4	$6-10	$0.101[c]	$0
CY2021	Traditional	$1.46	$4-10	$0.195	$0
February 2021-February 2024	Catastrophe Bond	$0.575	$6-9	$0.079[d]	$0

Source: FEMA websites at https://www.fema.gov/flood-insurance/work-with-nfip/reinsurance and information provided by FEMA Congressional Affairs staff, November 15, 2021.

a. Premiums of $62 million in each of first and second years, $63.75 million in third year.

b. Premiums of $32 million in first year, $38 million in second year, $37.2 million in third year.

c. Premiums of $50.28 million in first year and $50.88 million in second year.

d. Premium of $79.44 million in the first year.

The NFIP has claimed on reinsurance once, after the losses experienced after Hurricane Harvey, which resulted in over $9 billion paid by the NFIP to policyholders and triggered the full claim of $1.042 billion on the 2017 reinsurance. To date, FEMA has not claimed on any of the catastrophe bonds.

Private Flood Insurance Outside the NFIP: Issues and Barriers

One of the reasons that Congress created the NFIP in 1968 was the general unavailability of flood insurance from private insurers. Private flood insurance was offered between 1895 and 1927, but losses incurred from the 1927 Mississippi River floods and additional flood losses in 1928 led most insurers to stop offering flood policies.[48] Private flood insurance companies largely concluded that flood peril was uninsurable because of the catastrophic nature of flooding, the difficulty of determining accurate rates, the risk of adverse selection,[49] and the concern that they could not profitably provide risk-based flood coverage at a price that consumers felt they could afford.[50]

Currently, the private flood insurance market most commonly provides commercial coverage, secondary coverage above the NFIP maximums, or coverage in the lender-placed market.[51] The 2018 premiums for private flood insurance as reported to the National Association of Insurance Commissioners (NAIC)[52] totaled $644 million, up from $589 million in 2017 and $376 million in 2016,[53] compared to the $3.5 billion total amount of NFIP premiums. In general, the private flood market tends to focus on high-value properties, which command higher premiums and therefore the extra expense of flood underwriting can be more readily justified.[54]

Currently few private insurers compete with the NFIP in the primary residential flood insurance market. One illustration of this is that the NAIC only began systematically collecting separate data on private flood insurance in 2016.

As discussed in the following sections, private insurers have identified a number of potential barriers to more widespread private sector involvement in providing flood insurance. Increasing private insurance may present a number of issues for the NFIP and for consumers.

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[48] National Research Council of the National Academies, *Affordability of National Flood Insurance Program Premiums: Report 1*, 2015, p. 23, http://www.nap.edu/catalog/21709/affordability-of-national-flood-insurance-program-premiums-report-1.

[49] Adverse selection is the phenomenon whereby persons with a higher than average probability of loss seek greater insurance coverage than those with less risk. See National Association of Insurance Commissioners (NAIC), *Glossary of Insurance Terms*, http://www.naic.org/consumer_glossary.htm.

[50] See GAO, *Flood Insurance: Strategies for Increasing Private Sector Involvement*, GAO-47-127, January 2014, p. 6, https://www.gao.gov/products/GAO-14-127, and Caroline Kousky and Howard Kunreuther, *The National Flood Insurance Program: Yesterday, Today and Tomorrow*, NAIC, Center for Insurance Policy and Research Study Series 2017-1: Flood Risk and Insurance, Kansas City, MO, April 2017, pp. 23-45, http://www.naic.org/documents/cipr_study_1704_flood_risk.pdf.

[51] The lender-placed or forced-place market is where lenders can force-place flood insurance on properties that are out of compliance with the mandatory purchase requirement.

[52] The NAIC is an organization of the state regulators of insurance and, among other things, collects the data that the regulators require to be reported by insurance companies.

[53] Statistics provided by the National Association of Insurance Commissioners to CRS. They do not include coverage written in the surplus lines marketplace by non-U.S. insurers.

[54] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 32.

Flood Insurance Coverage "at Least as Broad as" the NFIP

In BW-12, Congress explicitly provided for private flood insurance to fulfill the mandatory purchase mortgage requirement as long as the private flood insurance "provides flood insurance coverage which is at least as broad as the coverage" of the NFIP, among other conditions.[55] Implementation of this requirement has proved challenging. The crux of the implementation issue is in answering the question of who would evaluate whether specific policies met the "at least as broad as" standard and what criteria would be used in making this evaluation. Some lending institutions feel that they lack the necessary technical expertise to evaluate whether a flood insurance policy meets the definition of private flood insurance set forth in BW-12.[56]

The responsible federal agencies[57] issued two separate Notices of Proposed Rulemaking (NPRM) on the question, the first in October 2013,[58] and the second in November 2016.[59] On February 12, 2019, the agencies announced a final rule implementing this BW-12 requirement.[60] Of particular note, the agencies indicate the rule

- "allows institutions to rely on an insurer's written assurances in a private flood insurance policy stating the criteria are met; [and]
- clarifies that institutions may, under certain conditions, accept private flood insurance policies that do not meet the Biggert-Waters Act criteria."[61]

This second point may seem unusual, because BW-12 included a specific definition of private flood insurance, while the agencies indicate that the rule allows acceptance of private flood insurance that does not meet this statutory definition. In creating the exception that allows private flood insurance that does not follow the statutory definition of "private flood insurance," the agencies relied on the usage of the more general term "flood insurance" in 42 U.S.C. 4012a(b)(1)(A) combined with the perceived congressional intent to promote private insurance in BW-12.[62]

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[55] 42 U.S.C §4012a(b).

[56] Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, National Credit Union Administration, "Loans in Areas Having Special Flood Hazards, Proposed Rule," vol. 78, no. 201 *Federal Register* 65113, October 30, 2013.

[57] Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, and National Credit Union Administration.

[58] Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, National Credit Union Administration, "Loans in Areas Having Special Flood Hazards, Proposed Rule," vol. 78, no. 201, *Federal Register* 65108-65144, October 30, 2013.

[59] Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, National Credit Union Administration, "Loans in Areas Having Special Flood Hazards—Private Flood Insurance," vol. 81, no. 215, *Federal Register* 78063-78080, November 7, 2016.

[60] Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, National Credit Union Administration, "Loans in Areas Having Special Flood Hazards—Private Flood Insurance," vol. 84, no. 34, *Federal Register* 4953-4975, February 20, 2019.

[61] Federal Reserve System, Farm Credit Administration, Federal Deposit Insurance Corporation, National Credit Union Administration, and Office of the Comptroller of the Currency, "New Rule Covers Private Flood Insurance," press release, February 12, 2019, at https://www.occ.gov/news-issuances/news-releases/2019/nr-ia-2019-15.html.

[62] For the complete agency rationale, see the section entitled "Discretionary Acceptance" in Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration, National Credit Union Administration, "Loans in Areas Having Special Flood Hazards—Private Flood Insurance," vol. 84, no. 34, *Federal Register* 4959-4960, February 20, 2019.

The rule took effect on July 1, 2019. Press reports described it as generally welcomed by the banking industry,[63] but it is unclear to what extent this new rule will encourage private flood insurance or whether additional legislative changes might be needed if Congress seeks to further encourage development of the private flood insurance market.

In the 115th Congress, H.R. 2874 and S. 1313 included provisions that would have revised the definition of private flood insurance, striking existing statutory language requiring private flood insurance to provide coverage "at least as broad as the coverage" provided by the NFIP in order to meet the mandatory purchase requirements. Instead, the new definition would have relied on whether the insurance policy and insurance company were in compliance with the laws and regulations in the state where the insurance was purchased. S. 1368 and S. 1571 had no similar provisions. Neither of the bills in the 116th Congress included any provisions related to the definition of private flood insurance.

Continuous Coverage

An associated issue is that of continuous coverage, which is required for property owners to retain any subsidies or cross-subsidies in their NFIP premium rates. Under existing law, if an NFIP policyholder allows their policy to lapse, any subsidy that they currently receive would be eliminated immediately.[64] Unless legislation specifically allows private flood insurance to count for continuous coverage, a borrower may be reluctant to purchase private insurance if doing so means they would lose their subsidy should they later decide to return to NFIP coverage.

In the 115th Congress, H.R. 2874 included a provision that would have specified that if a property owner purchases private flood insurance and decides then to return to the NFIP, they would be considered to have maintained continuous coverage. S. 1313 included a provision to allow private flood insurance to count as continuous coverage. S. 1368 and S. 1571 had no similar provisions. In the 116th Congress, Section 401 of H.R. 3167 would have considered any period during which a property is covered by a flood insurance policy, either through the NFIP or a private company, to be a period of continuous coverage. S. 2187 did not contain any provisions related to continuous coverage.

The "Non-Compete" Clause

Before FY2019, the Write Your Own carriers, private insurers who sell and service NFIP policies, were restricted in their ability to sell flood insurance policies on their own behalf while also participating as a WYO, due to a "non-compete" clause contained in the standard NFIP contracts.[65] These contracts governing the WYO companies' participation in the NFIP restricted the WYO carriers from selling their own standalone private flood products.[66] A non-compete clause would require WYO companies to decide whether to offer private flood insurance policies in their own right or to act as WYO carriers, thus potentially limiting the size of the private flood market. In the 115th Congress, H.R. 2874 would have eliminated the non-compete clause in place

[63] See, for example, Sinnock, Bonnie, "Banks Claim Victory in New Private Flood Insurance Rule," *American Banker*, February 11, 2019.

[64] As required by §100205(a)(1)(B) of BW-12 (P.L. 112-141, 126 Stat. 917), only for NFIP policies that lapsed in coverage as a result of the deliberate choice of the policyholder.

[65] Details of the FY2021 WYO company arrangements are available at https://www.fema.gov/sites/default/files/2020-10/fema_fy-21-wyo-financial-subsidy-arrangement_october-2020.pdf.

[66] GAO, *Flood Insurance: Potential Barriers Cited to Increased Use of Private Insurance*, GAO-16-611, July 14, 2016, p. 31, https://www.gao.gov/assets/680/678414.pdf.

at the time, while S. 1313 would have provided temporary authorization for WYOs to sell private flood insurance for certain types of properties,[67] with a follow-up study by FEMA to determine if the authorization should be made permanent.

The CBO cost estimate of H.R. 2874[68] considered the impact of eliminating the WYO companies' non-compete agreement. CBO estimated that, over the 2017-2027 period, holders of about 690,000 properties that, under existing law, would have been purchased under the NFIP would instead choose to buy private flood insurance to cover those properties if H.R. 2874 were enacted. CBO did not expect any property owners who are subsidized by the NFIP to be among those leaving the program.[69] CBO estimated that eliminating the non-compete clause and making NFIP data publically available would lead to an increase in spending of $39 million for the 2018-2022 period and $393 million for the 2018-2017 period.[70]

FEMA implemented changes in the standard WYO contracts for FY2019 removing the restrictions on WYO companies offering private flood insurance, while maintaining requirements that such private insurance lines remain entirely separate from a WYO company's NFIP insurance business.[71] The non-compete clause has again been excluded from the WYO agreements for FY2020[72] and FY2021.[73] This action removes the non-compete clause without legislation, although FEMA in the future would retain the authority to reinstate the non-compete clause.

NFIP Subsidized Rates

FEMA's subsidized rates are often seen as one of the primary barriers to private sector involvement in flood insurance.[74] However, even without the subsidies mandated by law, the NFIP's definition of full-risk rates differs from that of private insurers. Whereas the NFIP's full-risk rates must incorporate expected losses and operating costs, a private insurer's full-risk rates must also incorporate a profitable return on capital. As a result, even those NFIP policies which are considered to be actuarially sound from the perspective of the NFIP may still be underpriced from the perspective of private insurers.[75] In order to make the flood insurance market attractive,

[67] Non-residential properties, severe repetitive loss properties, business properties, or any property that has incurred flood-related damage in which the cumulative amount of payments equaled or exceeded the fair market value of the property.

[68] Congressional Budget Office, *Cost Estimate. H.R. 2874, 21st Century Flood Reform Act*, Washington, DC, September 8, 2017, pp. 1-13, https://www.cbo.gov/publication/53088.

[69] Ibid., p. 9.

[70] Ibid., p. 5.

[71] FEMA, "National Flood Insurance Program (NFIP); Assistance to Private Sector Property Insurers, Notice of FY 2019 Arrangement," 83(52) *Federal Register* 11772-11778, March 16, 2018.

[72] FEMA, Federal Insurance and Mitigation Administration, *FY2020 Financial Assistance/Subsidy Arrangement*, October 1, 2019, https://www.fema.gov/sites/default/files/2020-05/FY2020-WYO-Financial-Assistance-Subsidy-Arrangement.pdfhttps://www.fema.gov/media-library-data/1572968146685-72df1f4c423446afef8104ba79ee81c3/FY2020-WYO-Financial-Assistance-Subsidy-Arrangement.pdf.

[73] FEMA, Federal Insurance and Mitigation Administration, *FY2021 Financial Assistance/Subsidy Arrangement*, October 1, 2020, https://www.fema.gov/sites/default/files/2020-10/fema_fy-21-wyo-financial-subsidy-arrangement_october-2020.pdf.

[74] GAO, *Flood Insurance: Comprehensive Reform Could Improve Solvency and Enhance Resilience*, GAO-17-425, April 2017, p. 34, https://www.gao.gov/products/GAO-17-425.

[75] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for*

private insurers would want to be able to charge premium rates that reflect the full estimated risk of potential flood losses while still allowing the companies to make a profit. A reformed NFIP rate structure could have the effect of encouraging more private insurers to enter the primary flood market because NFIP full-risk based rates would be closer to the rates that private insurers would likely charge; however, this could lead to higher rates for households.

In the 115th Congress, H.R. 2874 would have phased out the pre-FIRM subsidy for primary residences at a rate of 6.5%-15% (compared to the current rate of 5%-18%),[76] in a staged manner. In the first year after enactment, the minimum rate increase would have been 5%; in the second year after enactment, the minimum rate increase would have been 5.5%; and in the third year of enactment, the minimum rate increase would have been 6%. The phaseout of the pre-FIRM subsidy for other categories of properties[77] would have remained at 25%. The Senate bills in the 115th Congress did not contain any provisions related to premium rate subsidies. In the 116th Congress, H.R. 3167 would not have changed the rates at which subsidies can be phased out. S. 2187, Section 102, would have prohibited FEMA from increasing the amount of covered costs above 9% per year on any policyholder during the five-year period beginning on the date of enactment. Covered costs include premiums, surcharges (including the surcharge for ICC coverage and the HFIAA surcharge), and the Federal Policy Fee. This would have limited the rate of increase of covered costs for all categories of policies, not just policies for primary residences, and would be particularly significant for those policies where the pre-FIRM subsidy is currently being phased out at 25% per year.

FEMA is in the process of introducing a redesigned risk rating system for the NFIP, known as Risk Rating 2.0.[78] The new premium rates went into effect for new NFIP policies on October 1, 2021, and will take effect for current policyholders on April 1, 2022. Premiums under Risk Rating 2.0 will reflect an individual property's risk and reflect more types of flood risk in rates. Premiums will be calculated based on the specific features of an individual property, including structural variables such as the foundation type of the structure, the height of the lowest floor of the structure relative to base flood elevation, and the replacement cost value of the structure. Risk Rating 2.0 will incorporate a broader range of flood frequencies and sources than the current rating system, as well as geographical variables such as the distance to water, the type and size of nearest bodies of water, and the elevation of the property relative to the flooding source. Risk Rating 2.0 will continue the overall policy of phasing out NFIP subsidies, but will not be able to increase rates annually beyond the limitations on annual premium increases which are set in statute.[79] Risk Rating 2.0 will not eliminate the three categories of properties which pay less than the full risk-based rates, nor the process of phasing out subsidies which began with BW-12. In general, Risk Rating 2.0 is expected to lead to the reduction of cross-subsidies between NFIP policyholders, and the eventual elimination of premium subsidies and cross-subsidies once all properties are paying the full risk-based rate. This should bring NFIP premiums closer to the premiums of private insurers and could potentially increase competition.

Privatizing the NFIP, August 13, 2015, p. 58.

[76] For a discussion of the rates at which NFIP subsidies can be phased out, see the section on Pricing and Premium Rate Structure in CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel.

[77] Non-primary residences, non-residential properties, severe repetitive loss properties, properties with substantial cumulative damage, and properties with substantial damage or improvement after July 6, 2012.

[78] For additional information on Risk Rating 2.0, see CRS Report R45999, *National Flood Insurance Program: The Current Rating Structure and Risk Rating 2.0*, by Diane P. Horn.

[79] 42 U.S.C. §4015(e).

Regulatory Uncertainty

As addressed above, the rules on the acceptance of private insurance for the mandatory purchase requirement, and whether or not private flood insurance would count for continuous coverage, have had a significant impact on the market potential for private insurers.[80] Another driver of private sector concern is regulatory uncertainty at the state level. The role of state regulators would increase in a flood insurance market with increased private sector involvement, which could increase the burden of oversight. The involvement of 56 state and territorial insurance regulators is likely to add complexity and additional costs for insurers, lenders, or property owners.[81] For example, some private insurers cited the intervention of state regulators in controlling rates for wind insurance in Florida as a reason for withdrawing from that market.[82] However, this could also lead to the development of state-specific insurance solutions, which might better suit local social and economic conditions.[83] In the 115th Congress, H.R. 2874 and S. 1313 referenced state laws and regulations in their definition of private flood insurance that could meet the mandatory purchase requirements. Neither of the bills in the 116th Congress included any provisions related to state laws or regulation of private flood insurance.

Ability to Assess Flood Risk Accurately

Many insurers view the lack of access to NFIP data on flood losses and claims as a barrier to more private companies offering flood insurance. It is argued that increasing access to past NFIP claims data would allow private insurance companies to better estimate future losses and price flood insurance premiums, and ultimately to determine which properties they might be willing to insure.[84] However, FEMA's view is that the agency would need to address privacy concerns in order to provide property level information to insurers, because the Privacy Act of 1974[85] prohibits FEMA from releasing policy and claims data which contain personally identifiable information. Private insurers have also suggested that better flood risk assessment tools such as improved flood maps and inland and storm surge models are needed in order to price risks at the individual and portfolio level.[86] In the 115th Congress, H.R. 2874 would have required FEMA to make all NFIP claims data publicly available in a form that does not reveal personally identifiable information, while S. 1313 would have authorized FEMA to sell or license individual claims data while requiring FEMA to make aggregate claims data available. In the 116th Congress, H.R. 3167, Section 404, would have allowed FEMA to provide current and historical property-specific information on flood insurance program coverage, flood damage assessments, and payment of

[80] See FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 62; and GAO, *Flood Insurance: Potential Barriers Cited to Increased Use of Private Insurance*, GAO-16-611, July 14, 2016, pp. 26-29, https://www.gao.gov/assets/680/678414.pdf.

[81] Ibid., p. 63.

[82] Ibid., p. 105.

[83] Ibid., p. 41.

[84] American Academy of Actuaries Flood Insurance Work Group, *The National Flood Insurance Program: Challenges and Solutions*, April 2017, p. 60, http://www.actuary.org/files/publications/FloodMonograph.04192017.pdf.

[85] P.L. 93-579, 5 U.S.C. §552a, as amended.

[86] See, for example, GAO, *Flood Insurance: Strategies for Increasing Private Sector Involvement*, 14-127, January 2, 2014, pp. 10-11, https://www.gao.gov/products/GAO-14-127; FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 61; and Albert Kuller and Eleanor Gibson, *After the Storms: Harvey, Irma and Maria: Lessons Learned*, Lloyds, Market Insight Report 2018, May 24, 2018, pp. 1-30, https://www.lloyds.com/news-and-risk-insight/risk-reports/library/natural-environment/afterthestorms.

claims to private insurers, on the condition that private insurers provide the same information to FEMA, homeowners and home buyers. S. 2187, Section 305, would have required FEMA to report on the feasibility of selling or licensing the use of historical structure-specific NFIP claims data to non-governmental entities, while reasonably protecting policyholder privacy.

Adequate Consumer Participation

Insurers need sufficient consumer participation to manage and diversify their risk exposure. Many private insurers have expressed the view that broader participation in the flood insurance market would be necessary to address adverse selection and maintain a sufficiently large risk pool.[87] A long-standing objective of the NFIP has been to increase purchases of flood insurance policies, and this objective was the motivation for introducing the mandatory purchase requirement.

Despite the mandatory purchase requirement, not all covered mortgages carry the insurance as dictated, and no up-to-date data on national compliance rates with the mandatory purchase requirement are available. A 2006 study commissioned by FEMA found that compliance with this mandatory purchase requirement may be as low as 43% in some areas of the country (the Midwest), and as high as 88% in others (the West).[88] A 2017 study of flood insurance in New York City found that compliance with the mandatory purchase requirement by properties in the SFHA with mortgages increased from 61% in 2012 to 73% in 2016.[89] The escrowing of NFIP insurance premiums, which began in January 2016, may increase compliance with the mandatory purchase requirement more widely, but no data are yet available.

The mandatory purchase requirement could potentially be expanded to more (or all) mortgage loans made by federally regulated lending institutions for properties in communities participating in the NFIP.[90] Another possible option would be to require all properties within the SFHA to have flood insurance, not just those with federally backed mortgages.[91] Consumer participation could also be increased if the federal government were to mandate that homeowners' insurance policies include flood coverage or require all homeowners to purchase flood insurance.[92] All four 115th Congress bills contained provisions for some form of study to assess the compliance with the mandatory purchase requirement. H.R. 2874 would also have increased civil penalties on lenders for failing to enforce the mandatory purchase requirement. In the 116th Congress, both H.R. 3167, Section 408, and S. 2187, Section 108, would have required GAO to determine the percentages of properties with federally backed mortgages located in SFHAs that satisfy the mandatory purchase

[87] GAO, *Flood Insurance: Strategies for Increasing Private Sector Involvement*, 14-127, January 2, 2014, p. 14, https://www.gao.gov/products/GAO-14-127.

[88] Lloyd Dixon, Noreen Clancy, and Seth A. Seabury, et al., *The National Flood Insurance Program's Market Penetration Rate: Estimates and Policy Implications*, RAND Corporation, prepared as part of the Evaluation of the National Flood Insurance Program, February 2006, p. 23, https://www.rand.org/content/dam/rand/pubs/technical_reports/2006/RAND_TR300.pdf.

[89] Lloyd Dixon, Noreen Clancy, and Benjamin M. Miller, et al., *The Cost and Affordability of Flood Insurance in New York City: Economic Impacts of Rising Premiums and Policy Options for One- to Four- Family Homes*, Rand Corporation, RAND RR1776, Santa Monica, CA, April 2017, pp. 15-18, https://www.rand.org/pubs/research_reports/RR1776.html.

[90] NFIP, *Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, Appendix C: Flood Insurance Risk Study: Options for Privatizing the NFIP, August 13, 2015, p. 86.

[91] Association of State Floodplain Managers, Inc., *Rethinking the NFIP*, ASFPM Comments on NFIP Reform, January 11, 2011, p. 5, https://www.floods.org/whats-new/rethinking-the-nfip-comments-from-asfpm/.

[92] GAO, *Flood Insurance: Strategies for Increasing Private Sector Involvement*, 14-127, January 2, 2014, p. 22, https://www.gao.gov/products/GAO-14-127.

requirement, and the percentage of properties with federally backed mortgages located in the 500-year floodplain[93] that would satisfy the mandatory purchase requirement if the mandatory purchase requirement applied to such properties. Both bills would also have required GAO to conduct a study to address how to increase participation rates through programmatic and regulatory changes.

Potential Effects of Increased Private Sector Involvement in the Flood Market

Increased Consumer Choice

Current NFIP policies offer a relatively limited array of coverages, particularly compared to what is available in private markets for similar insurance against perils other than floods. Private insurance companies could potentially compete with the NFIP by offering coverage not available under the NFIP, such as business interruption insurance, living expenses while a property is being repaired, basement coverage, coverage of other structures on a property, and/or by offering policies with coverage limits higher than the NFIP. The NFIP currently also has a 30-day waiting period in almost all cases before the insurance coverage goes into effect,[94] whereas private insurance companies may have a shorter waiting period. Private companies could also offer flood coverage as an add-on to a standard homeowners' policy, which could eliminate the current problem of distinguishing between flood damage (which is covered by the NFIP) and wind damage (which is often covered by standard homeowners' insurance). Unlike the NFIP, private flood insurance companies may also issue a policy without necessarily requiring elevation certificates, perhaps by using new technology to measure the elevation of individual structures.

Cheaper Flood Insurance

Since some properties receive lower NFIP rates due to cross subsidies from other NFIP policyholders, it seems likely that some of the non-subsidized NFIP policyholders would be able to obtain less expensive flood insurance from private insurers. Private insurers may also be able to offer premiums more closely tied to individual risks than the NFIP currently does, which would provide lower premiums for some policyholders. Quantifying the potential savings for some policyholders from private insurance is, however, difficult, as the amount and extent of cross-subsidization within the NFIP is not fully known. One example of an attempt to provide estimates of NFIP versus private insurance is a modeling exercise carried out by two private companies, Milliman and KatRisk, which looked at premiums for single-family homes in Louisiana, Florida, and Texas. Their modeling suggested that 77% of single-family homes in Florida, 69% in Louisiana, and 92% in Texas would pay less with a private policy than with the NFIP; however, 14% in Florida, 21% in Louisiana, and 5% in Texas would pay over twice as much.[95] Milliman did not provide any details of the coverage offered by these private policies, nor the basis on which their figures were estimated.

[93] The 500-year floodplain is defined by FEMA as an area with a 0.2% or greater risk of flooding every year.

[94] See FEMA, *Flood Insurance Manual, Before You Start*, Revised April 2021, pp. 2-11 to 2-14, https://www.fema.gov/sites/default/files/documents/fema_nfip-all-flood-insurance-manual-apr-2021.pdf.

[95] Nancy P. Watkins, *Could Private Flood Insurance Be Cheaper Than the NFIP?* Milliman, Milliman Briefing Paper, San Francisco, CA, July 10, 2017, pp. 1-2, http://www.milliman.com/insight/2017/Could-private-flood-insurance-be-cheaper-than-the-NFIP/.

Variable Consumer Protections

The consumer protections associated with private policies are likely to be enforced at a state level and will therefore be variable; some states may offer a higher level of protection than others. Because private insurers are free to accept or reject potential policyholders as necessary in order to manage their risk portfolio, private insurers may not necessarily renew a policy. A private flood insurance policy might be less expensive than an NFIP policy, but it might also offer less extensive coverage, which a policyholder may not realize until they make a claim following a flood. Unlike the NFIP, the language in private flood insurance policies is not standardized and has not yet been tested in court in the same way as, for example, homeowners' insurance. Thus there may be greater variability in claims outcomes for consumers in the early years of private flood insurance penetration.

Adverse Selection

Private sector competition might increase the financial exposure and volatility of the NFIP, as private markets will likely seek out policies that offer the greatest likelihood of profit. In the most extreme case, the private market may "cherry-pick" (i.e., adversely select against the NFIP) the profitable, lower-risk NFIP policies that are "overpriced" either due to cross-subsidization or imprecise flood insurance rate structures, particularly when there is pricing inefficiency in favor of the customer.[96] This could leave the NFIP with a higher density of actuarially unsound policies that are being directly subsidized or benefiting from cross-subsidization. Because the NFIP cannot refuse to write a policy, those properties that are considered "undesirable" by private insurers are likely to remain in the NFIP portfolio—private insurers will not compete against the NFIP for policies that are inadequately priced from their perspective.[97] Private insurers, as profit-seeking entities, are unlikely independently to price flood insurance policies in a way that ensures affordable premiums as a purposeful goal, although some private policies could be less expensive than NFIP policies. It is likely that the NFIP would be left with a higher proportion of subsidized policies, which may become less viable in a competitive market.[98]

The extent of such "cherry picking" is uncertain with some arguing that it would have little effect.[99] However, evidence from the UK flood insurance market suggests that even in an entirely private market "cherry picking" can be difficult to avoid. Interviews of private insurers indicate that one of the key drivers for the introduction of Flood Re, the UK private flood insurance scheme which was introduced in 2016, was the emergence of new entrants in the flood insurance market after 2000. These new entrants had little or no existing high-flood-risk business and no commitment to continue to insure this business under the terms of the then-existing informal agreement with the government. This gave them a competitive advantage, as they could choose to select the more profitable lower-risk business. One driver for change therefore was that Flood Re

[96] David Altmaier, Andy Case, and Mike Chaney, et al., *Flood Risk and Insurance*, NAIC Center for Insurance Policy and Research, CIPR Study Series 2017-1, April 2017, p. 47, http://www.naic.org/documents/cipr_study_1704_flood_risk.pdf.

[97] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 85.

[98] American Academy of Actuaries Flood Insurance Work Group, *The National Flood Insurance Program: Challenges and Solutions*, April 2017, p. 66, http://www.actuary.org/files/publications/FloodMonograph.04192017.pdf.

[99] See, for example, R.J. Lehman, "Private Flood Insurance Market Is Getting Bigger, More Competitive, Less Profitable," *Insurance Journal*, March 18, 2018, at https://www.insurancejournal.com/blogs/right-street/2018/03/18/483689.htm.

would include these new entrants and force them to contribute by charging their clients for the cross-subsidy for Flood Re, leveling the playing field between the private insurers.[100]

A significant increase in private flood insurance policies that "depopulates" the NFIP may also undermine the NFIP's ability to generate revenue, reducing the amount of past borrowing that can be repaid or extending the time required to repay the debt. If the number of NFIP policies decreases, it would likely become increasingly difficult for the remaining NFIP policyholders to subsidize policies, raising prices for the non-subsidized policyholders and thus accelerating the move to private insurance. In the long term the program could be left as a "residual market" for subsidized or high-risk properties. Residual market mechanisms are used in areas such as auto insurance, where consumers may be required to purchase insurance, but higher risk individuals may be unable to purchase it from regular insurers. The exact form of residual market mechanisms varies in different states and for different types of insurance, but they typically require some form of outside support either from the government or from insurers themselves.

In the 115th Congress, S. 1313 would have required FEMA, within two years of enactment, to report on the extent to which the properties for which private flood insurance is purchased tend to be at a lower risk than properties for which NFIP policies are purchased (i.e., the extent of adverse selection), by detailing the risk classifications of the private flood insurance policies. S. 1313 would also have provided the FEMA Administrator the power to limit the participation of WYO companies in the broader flood insurance marketplace if the Administrator determined that private insurance adversely impacts the NFIP. Neither of the bills in the 116th Congress included any provisions related to adverse selection.

Issues for NFIP Flood Mapping and Floodplain Management

If the number of NFIP policyholders were to decrease significantly, it might also be difficult to support the NFIP's functions of reducing flood risk through flood mapping and floodplain management.[101] NFIP flood mapping is currently funded in two ways, through (1) annual discretionary appropriations; and (2) discretionary spending authority from offsetting money collected from the Federal Policy Fee (FPF).[102] The FPF is paid to FEMA and deposited in the National Flood Insurance Fund (NFIF). The income from the FPF is designated to pay for floodplain mapping activities, floodplain management programs, and certain administrative expenses.[103] About 66% of the resources from the FPF are allocated to flood mapping, with floodplain management receiving about 19% of the overall income from the FPF.[104] To the extent that the private flood insurance market grows and policies move from the NFIP to private insurers, FEMA will no longer collect the FPF on those policies and less revenue will be available for floodplain mapping and management. Concerns have been raised about maintaining the activities funded by the FPF, with some stakeholders arguing that a form of FPF equivalency, or some form of user fee, should be applied to private flood insurance.[105] In the 115th Congress, both

[100] Edmund C. Penning-Rowsell, Sally Priest, and Clare Johnson, "The Evolution of UK Flood Insurance: Incremental Change Over Six Decades," *International Journal of Water Resources Development*, vol. 30, no. 4 (2014), pp. 694-713.

[101] For a further discussion of the NFIP's floodplain management and mapping functions, see CRS Report R46095, *The National Flood Insurance Program: Selected Issues and Legislation in the 116th Congress*, by Diane P. Horn and Baird Webel.

[102] For an additional explanation of NFIP funding, including the funding for mapping, see CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel.

[103] 42 U.S.C. §4014(a)(1)(B)(iii).

[104] Email correspondence from FEMA Congressional Affairs staff, December 6, 2016.

[105] Association of State Floodplain Managers, *ASFPM Detailed Priorities for NFIP Reauthorization and Reform*, April 1, 2019, p. 1, https://cdn.ymaws.com/floodplain.org/resource/resmgr/ASFPM_2019_NFIP_Reauthorizat.pdf.

S. 1313 and S. 1368 contained mechanisms by which private insurance companies could have contributed to the costs of floodplain mapping in lieu of paying the FPF. In the 116th Congress, S. 2187, Section 303, would have required FEMA to develop a fee schedule based on recovering the actual costs of providing FIRMs and charge any private entity an appropriate fee for use of such maps.

Enforcement of floodplain management standards could be more challenging within a private flood insurance system, as the current system makes the availability of NFIP insurance in a community contingent on the implementation of floodplain management standards. For example, the Association of State Floodplain Managers (ASFPM) has expressed concerns that the widespread availability of private flood insurance could lead some communities to drop out of the NFIP and rescind some of the floodplain management standards and codes they had adopted, leading to more at-risk development in flood hazard areas.[106] ASFPM suggested that this issue could be addressed by allowing private policies to meet the mandatory purchase requirement only if they were sold in participating NFIP communities.[107] FEMA suggested that access to federal disaster assistance could be made partially contingent on the adoption of appropriate mitigation policies, but noted that this approach could be politically challenging.[108] However, a positive consequence is that government investment in mitigation could increase private market participation by reducing the flood exposure of high-risk properties and thereby increasing the number of properties that private insurers would be willing to cover.[109]

Concluding Comments

The policy debate surrounding NFIP and private insurance has evolved over time. The discussion in 2012 was framed in the context of privatization of the NFIP and actions that might be taken to create conditions for private sector involvement. One of the primary interests of Congress at the time was to reduce the federal government's role in flood insurance by transferring its exposure to the private sector,[110] with an expectation that a realignment of roles would allow the federal government to focus on flood risk mitigation while private markets focused on providing flood insurance.[111] One argument for increasing private sector participation in the U.S. flood market was that competition should lead to innovation in flood risk analytics and modeling and produce new flood insurance products that would better meet customer needs and lead to greater levels of insurance market penetration.[112] In fact, private sector flood risk analytics and modeling have improved significantly before any sizable entry of private insurers into the market. Another argument was that, in contrast to the NFIP, which cannot diversify its portfolio of flood risk by insuring unrelated risks, the insurance industry can diversify catastrophic risks with uncorrelated

[106] Association of State Floodplain Managers, *ASFPM's Comments on Loans in Areas Having Special Flood Hazards - Private Flood Insurance Joint Notice of Proposed Rulemaking*, January 6, 2017, pp. 1-4, https://asfpm-library.s3-us-west-2.amazonaws.com/ASFPM_Pubs/ASFPM_Comemnts_SFHA_Loans_Private_Flood_Insurance_2017.pdf.

[107] Ibid.

[108] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 92.

[109] Ibid., p. 108.

[110] Ibid., p. 2.

[111] Ibid., p. 52.

[112] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 50.

or less correlated risks from other perils, other geographic regions, non-catastrophic risks, or risks from unrelated lines of business.[113]

FEMA considered a range of concrete steps by which the barriers to private sector involvement could be addressed.[114] Two of these have been introduced: the purchase of reinsurance and reporting to make premium subsidies and cross-subsidies more transparent.[115] The reduction of premium subsidies for some properties will occur with the introduction of Rating 2.0.[116] Although BW-12 directed FEMA to make a recommendation about the best manner in which to accomplish the privatization of the NFIP, FEMA presented the report without a recommendation, arguing that any privatization strategy is complex and involves significant policy decisions that would require input from a variety of stakeholders. They concluded that there is no single, clear solution; it is heavily politicized; and harsh criticism of any change is inevitable.[117]

Currently the discussion is more focused on sharing risk and increasing penetration rates, with the recognition that neither the NFIP nor the private sector is likely to be able to write all of the policies needed to cover all of the flood risk in the United States. FEMA has identified the need to increase flood insurance coverage across the nation as a major priority for NFIP reauthorization, and this also forms a key element of their 2018-2022 strategic plan.[118] FEMA has developed a "moonshot" with the goal of doubling flood insurance coverage by 2023 through the increased sale of both NFIP and private policies.

FEMA's view is that both the NFIP and an expanded private market will be needed to increase flood insurance coverage for the nation and reduce uninsured flood losses.[119] However, the private market is unlikely to expand significantly without congressional action. The concerns of private companies related to the mandatory purchase requirement and continuous coverage and the concerns of some Members of Congress about adverse selection are among the most pressing issues likely to be addressed in any long-term NFIP reauthorization.

[113] Ibid., p. 51.

[114] Ibid., pp. 82-84.

[115] The requirement in §28 of HFIAA (P.L. 113-89, 128 Stat. 1033) that the Administrator "clearly communicate full flood risk determinations to individual property owners regardless of whether their premium rates are full actuarial rates."

[116] For a full discussion of NFIP subsidies and cross-subsidies, see the section on Pricing and Premium Rate Structure in CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel; the section on Premiums Subsidies and Cross-Subsidies in CRS Report R46095, *The National Flood Insurance Program: Selected Issues and Legislation in the 116th Congress*, by Diane P. Horn and Baird Webel; and the section on Premium Subsidies and Cross-Subsidies in CRS Report R45999, *National Flood Insurance Program: The Current Rating Structure and Risk Rating 2.0*, by Diane P. Horn.

[117] FEMA, *National Flood Insurance Program Report to Congress on Reinsuring NFIP Insurance Risk and Options for Privatizing the NFIP*, August 13, 2015, p. 84.

[118] FEMA, *2018-2022 Strategic Plan*, https://www.fema.gov/media-library/assets/documents/160940.

[119] U.S. Congress, Senate Committee on Banking, Housing, and Urban Affairs, *Statement of Roy E. Wright*, Hearing on Reauthorization of the National Flood Insurance Program, Part I, 115th Cong., 1st sess., March 14, 2017, pp. https://www.fema.gov/sites/default/files/2020-07/roy-e-wright_reauthorization-nfip_statement_3-14-2017.pdf.

Appendix. Provisions Related to Private Flood Insurance in Legislation in the 116th Congress

The provisions in the 116th Congress legislation that relate to private flood insurance, and the issues raised as barriers to private sector involvement, are summarized below and compared side-by-side in **Table A-1**. S. 2187 also includes provisions related to administrative reforms of the NFIP, some of which may be relevant to private insurance companies, which are not described in this report. Comparable administrative reforms are included in H.R. 3111, the National Flood Insurance Program Administrative Reform Act of 2019, rather than H.R. 3167.

H.R. 3167, National Flood Insurance Program Reauthorization Act of 2019

- H.R. 3167, Section 107, would direct FEMA, if an NFIP policyholder switches to private flood insurance but has already paid the NFIP premiums for the whole year up front, to provide a prorated refund of the NFIP premium. This section would also direct that Increased Cost of Compliance (ICC) premiums[120] would not be refunded if measures had been implemented using ICC coverage, and that premiums would not be refunded if a claim has been paid or is pending under the policy term for which the refund is sought.
- H.R. 3167, Section 401, would direct FEMA to consider private flood insurance that satisfies the mandatory purchase requirement as also satisfying the continuous coverage requirement to keep NFIP premium subsidies in place.
- H.R. 3167, Section 404, would allow FEMA to provide current and historical property-specific information on flood insurance program coverage, flood damage assessments, and payment of claims to private insurers, on the condition that private insurers provide the same information to FEMA, homeowners, and home buyers. Section 404 could potentially create conflicts with the Privacy Act of 1974, which prohibits federal agencies from releasing data which contains Personally Identifiable Information. In addition, although these data could be used to better inform the participation of private insurers in offering private flood insurance, the availability of NFIP data could make it easier for private insurers to identify the NFIP policies that are "overpriced" due to explicit cross-subsidization or imprecise flood insurance rate structures. Private insurers may adversely select such properties, while the government would likely retain the policies that benefit from those subsidies and imprecisions, potentially increasing the deficit of the NFIP.[121]
- H.R. 3167, Section 406, would require FEMA annually to evaluate ceding a portion of the risk of the NFIP to the private reinsurance or capital markets.
- H.R. 3167, Section 407, would give FEMA the authority to terminate any WYO arrangement in its entirety upon 30 days written notice for (1) fraud or

[120] The NFIP requires most policyholders, excluding condominium units and contents-only policies, to purchase Increased Cost of Compliance (ICC) coverage, which is in effect a separate insurance policy to offset the expense of complying with more rigorous building code standards when local ordinances require them to do so. ICC coverage provides an amount up to $30,000 in payments for certain eligible expenses.

[184] American Academy of Actuaries Flood Insurance Work Group, *The National Flood Insurance Program: Challenges and Solutions*, April 2017, p. 79, http://www.actuary.org/files/publications/FloodMonograph.04192017.pdf.

misrepresentation; (2) nonpayment to FEMA of any amount due; or (3) material failure to comply with the requirements of the arrangement or with the written standards, procedures, or guidance by FEMA.

- H.R. 3167, Section 408, would require GAO to determine the percentages of properties with federally backed mortgages located in SFHAs that satisfy the mandatory purchase requirement, and the percentage of properties with federally backed mortgages located in the 500-year floodplain[122] that would satisfy the mandatory purchase requirement if the mandatory purchase requirement applied to such properties.

S. 2187, National Flood Insurance Program Reauthorization and Reform Act of 2019

- S. 2187, Section 102, would prohibit FEMA from increasing the amount of covered costs above 9% per year on any policyholder during the five-year period beginning on the date of enactment. Covered costs include premiums, surcharges (including the surcharge for ICC coverage and the HFIAA surcharge), and the Federal Policy Fee. This would limit the rate of increase of covered costs for all categories of policies, not just policies for primary residences, and would be particularly significant for those policies where the pre-FIRM subsidy is currently being phased out at 25% per year. This cap on premium increases could potentially limit FEMA's ability to implement rate increases under Risk Rating 2.0. Section 102 would also amend the basis on which premiums are determined so that the calculation of an average historical loss year[123] would exclude catastrophic loss years. This would probably lower premiums for all policyholders.
- S. 2187, Section 108, would require GAO to determine the percentages of properties with federally backed mortgages located in SFHAs that satisfy the mandatory purchase requirement, and the percentage of properties with federally backed mortgages located in the 500-year floodplain that would satisfy the mandatory purchase requirement if the mandatory purchase requirement applied to such properties.
- S. 2187, Section 302, would establish that the total amount of reimbursement paid to WYO companies could not be greater than 22.46% of the aggregate amount of premiums charged by the company. It would also require FEMA to ensure that the commission paid by a WYO company to agents of the company would not be less than 15%.

[122] The 500-year floodplain is defined by FEMA as an area with a 0.2% or greater risk of flooding every year.

[123] The average historical loss year is the minimum target amount that the NFIP needs to collect from all premiums to cover at least average annual losses, as determined by historical data. FEMA uses this estimate to calculate the premium that would be sufficient to pay for the average level of losses that occurred in past years and help set the rate level for subsidized flood insurance policies. When the NFIP was originally established, the average historical loss year did not include catastrophic loss years. BW-12 directed FEMA to review the basis on which it was setting NFIP rates, with specific attention to ensuring that catastrophic loss years would be fully incorporated into the NFIP calculation of average historical loss year. See GAO, *Financial Challenges Underscore Need for Improved Oversight of Mitigation Programs and Key Contracts*, GAO-08-457, June 16, 2008, p. 19, https://www.gao.gov/products/gao-08-437; and National Research Council of the National Academies, *Affordability of National Flood Insurance Program Premiums: Report 1*, 2015, p. 42, http://www.nap.edu/catalog/21709/affordability-of-national-flood-insurance-program-premiums-report-1.

- S. 2187, Section 303, would require FEMA to develop a fee schedule based on recovering the actual costs of providing FIRMs and charge any private entity an appropriate fee for use of such maps. This requirement could provide a mechanism by which private insurance companies could contribute to the costs of floodplain mapping in lieu of paying the FPF.
- S. 2187, Section 304, would require FEMA, within 12 months of enactment, to develop a schedule to determine the actual costs of WYO companies and reimburse the WYO companies only for the actual costs of the service or products. It would require that all reimbursements made to WYO companies be made public, including a description of the product or service provided to which the reimbursement pertains.
- S. 2187, Section 305, would require FEMA to report on the feasibility of selling or licensing the use of historical structure-specific NFIP claims data to non-governmental entities, while reasonably protecting policyholder privacy.
- S. 2187, Section 405, would require FEMA to establish penalties for underpayment of claims by WYO companies that are not less than the penalty for overpayment of a claim.
- S. 2187, Section 408, would give FEMA the authority to direct a WYO company, on 14 days' notice, to terminate a contract or other agreement with any covered entity[124] that provides services to the WYO company, if FEMA determines that the covered entity has engaged in conduct that is detrimental to the NFIP.
- S. 2187, Section 415, would authorize FEMA to create a pilot program under which WYO companies and NFIP direct servicers would be required to investigate pre-existing structural conditions that might result in the denial of an NFIP claim, at the request of a policyholder or potential policyholder, before providing or renewing flood insurance coverage.

[124] A covered entity is defined in S. 2187, §408, as any attorney, law firm, consultant, or third-party company that provides services to a WYO company.

Table A-1. Provisions Related to Private Flood Insurance in Legislation in the 116th Congress

Provision	H.R. 3167	S. 2187
Continuous coverage	§401. Would direct FEMA to consider private flood insurance that satisfies the mandatory purchase requirement as also satisfying the continuous coverage requirement to keep NFIP premium subsidies in place.	No comparable provisions
Cap on premium increases	No comparable provisions	§102. Would prohibit FEMA from increasing the amount of covered costs[a] above 9% per year on any policyholder during the five-year period beginning on the date of enactment.
Risk transfer	§406. Would require FEMA annually to evaluate ceding a portion of the risk of the NFIP to the private reinsurance or capital markets, if the Administrator determines that the rates and terms are reasonable and doing so would further the development and maintenance of a sound financial framework for the NFIP.	No comparable provisions
WYO allowance	No comparable provisions	§302. Would establish that the total amount of reimbursement paid to WYO companies could not be greater than 22.46% of the aggregate amount of premiums charged by the company.
WYO costs	No comparable provisions	§302. Would require FEMA to ensure that the commission paid by a WYO company to agents of the company would not be less than 15%. §304. Would require FEMA, within 12 months of enactment, to develop a schedule to determine the actual costs of WYO companies and reimburse the WYO companies only for the actual costs of the service or products. Would also require that all reimbursements made to WYO companies be made public, including a description of the product or service provided to which the reimbursement pertains.
WYO pilot program	No comparable provisions	§415. Would authorize FEMA to create a pilot program under which WYO companies and NFIP direct servicers would be required to investigate pre-existing structural conditions that might result in the denial of an NFIP claim, at the request of a policyholder or potential policyholder, before providing or renewing flood insurance coverage.

Provision	H.R. 3167	S. 2187
WYO penalties	No comparable provisions	§405. Would require FEMA to establish penalties for underpayment of claims by WYO companies that are not less than the penalty for overpayment of a claim.
	§407. Would give FEMA the authority to terminate any WYO arrangement in its entirety upon 30 days written notice for (1) fraud or misrepresentation; (2) nonpayment to FEMA of any amount due; or (3) material failure to comply with the requirements of the arrangement or with the written standards, procedures, or guidance by FEMA.	§408. Would give FEMA the authority to direct a WYO company, on 14 days' notice, to terminate a contract or other agreement with any covered entity[b] that provides services to the WYO company, if FEMA determines that the covered entity has engaged in conduct that is detrimental to the NFIP.
NFIP claims data	§404. Would allow FEMA to provide current and historical property-specific information on flood insurance program coverage, flood damage assessments, and payment of claims to private insurers, on the condition that private insurers provide the same information to FEMA, homeowners, and home buyers.	§305. Would require FEMA to report on the feasibility of selling or licensing the use of historical structure-specific NFIP claims data to non-governmental entities, while reasonably protecting policyholder privacy.
Funding for flood mapping	No comparable provisions	§303. Would require FEMA to develop a fee schedule based on recovering the actual costs of providing FIRMs and charge any private entity an appropriate fee for use of such maps.
Study of compliance with mandatory purchase requirement	§408. Would require GAO to determine the percentages of properties with federally backed mortgages located in SFHAs that satisfy the mandatory purchase requirement, and the percentage of properties with federally backed mortgages located in the 500-year floodplain that would satisfy the mandatory purchase requirement if the mandatory purchase requirement applied to such properties.	§108. Would require GAO to determine the percentages of properties with federally backed mortgages located in SFHAs that satisfy the mandatory purchase requirement, and the percentage of properties with federally backed mortgages located in the 500-year floodplain that would satisfy the mandatory purchase requirement if the mandatory purchase requirement applied to such properties.

Source: CRS analysis of legislation from http://www.congress.gov.

Notes: H.R. 3167, as reported by the House Financial Services Committee (H.Rept. 116-262, Part I).

a. Covered costs include premiums, surcharges (including the surcharge for ICC coverage and the HFIAA surcharge), and the Federal Policy Fee.

b. A covered entity is defined as any attorney, law firm, consultant, or third-party company that provides services to a WYO company.

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Disclaimer

National Association of Insurance Commissioners

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CIPR Study

Usage-Based Insurance and Vehicle Telematics:
Insurance Market and Regulatory Implications

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This CIPR Study presents research whose purpose is to inform and disseminate ideas to regulators, academics and financial service professionals. The Studies are all available online at the CIPR website: http://www.naic.org/cipr_special_reports.htm

The mission for the CIPR is to serve federal and state lawmakers, federal and state regulatory agencies, international regulatory agencies, and insurance consumers by enhancing intergovernmental cooperation and awareness, improving consumer protection, and promoting appropriate marketplace competition.

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Contents

Glossary

DBD: Driving Behavior Data

DOI: Department of Insurance

ECU: Electronic Control Unit

FHWA: Federal Highway Administration

GPS: Global Positioning System

OBD: On-Board Diagnostics

PAYD: Pay-as-You-Drive

PAYDAYS: Pay-as-You-Drive-and-You-Save

PHYD: Pay-How-You-Drive

PPP: Public-Private Partnership

UBI: Usage-Based Insurance

VMT: Vehicle Miles Traveled

Forward

Forward

By NAIC Staff

The development of telematics-supported usage-based insurance (UBI) has ushered a new era in the world of automobile insurance. This study will take a closer look at these technological advances, explore the changes in the insurance market and analyze in-depth the implications of telematics for insurers, consumers and state regulators.

Vehicle telematics, integrated navigation, and computer and mobile communication technology used to directly monitor driving behavior allow insurers to use true causal risk factors to accurately assess risks and develop precise UBI rating plans. Furthermore, with premiums accurately reflecting true risks, policyholders are incentivized to adopt risk-minimizing behaviors with benefits accruing not only to consumers and insurance companies, but also to society as a whole. These benefits are propelling the insurance market to quickly expand the availability of telematics-based UBI programs. This was illustrated by the CIPR survey of state departments of insurance (DOI), which found telematics programs are now available in at least 42 states. A detailed description of the results of the survey can be found in the appendix of this study. (See page 71.)

Until recently and since the first automobile liability insurance was sold in the U.S. 116 years ago, premiums were generally determined, in the absence of true causal data, by using a variety of group behavior-based demographic proxy factors affecting loss costs, such as driver record, age, gender, marital status and residence geographic location known as territory. More recently, other variables such as education, occupation and credit scores have been found to correlate with loss ratio, although their usage is controversial and restricted in a number of jurisdictions.

At the individual driver level, the concepts of UBI, pay-as-you-drive (PAYD), pay-as-you-drive-as-you-save (PAYDAYS) and pay-how-you drive (PHYD) are not new at all, with mileage being among the rating variables insurers have historically used. However, the predictive value of variables such as mileage and other driving details (i.e., commuting distance and location) always hinged on the veracity of the information furnished by consumers.

The value of real driving behavior data for calculating a more precise premium reflecting true risk exposure was recognized in the early days of automobile insurance history in a 1929 paper[1] by Paul Dorweiler, president of the Casualty Actuarial Society (CAS) in the early 1930s. Dorweiler identified driver habits, speed, weather conditions, seasonal and daily car use, and

[1] Dorweiler, Paul. 1929. "Notes on Exposure and Premium Bases," Proceedings of the Casualty Actuarial Society XVI, p. 319; reprinted PCAS LVIII, 1972, p. 59.

mileage as critical factors directly contributing to accident frequency and severity.[2] While he recognized the simplicity, directness and definiteness in the measurement of these variables, Dorweiler lamented the fact they were not yet practically applicable due to the absence of the type of devices needed to record and convey such information.[3] Fast forward about seven decades, and Dorweiler's solution moved from science fiction realm to scientific fact and practical use for the everyday consumer.

The incorporation of new digital technologies in cars during the 1980s allowed for the development of increasingly electronic management and operation control sophisticated systems (engine management, suspension systems, braking, safety, etc.). All types of on-board diagnostics and other data could be collected and analyzed, but technologies similar to the telemetry systems, first used exclusively in high-tech race cars, with wireless communication capabilities, were only introduced for commercial use in the mid-1990s. Long-distance truck fleet operators started first successfully using telematics to track and coordinate vehicle movements for operational, maintenance and other purposes.

In addition to the proliferation of mobile telephony, it was the emergence of satellite-based navigation technology and the opening of the global positioning system (GPS), originally developed by the U.S. Department of Defense for the military, for civilian use that paved the way for the rapid development and successful use of telematics. Through the integration of these new systems, vehicle telematics could provide very detailed driving behavior data, including exact time and location, and communicate it to a remote central location. By the late 1990s, telematics were introduced to the insurance business, first to assist with underwriting decisions and then to help determine premiums more accurately reflecting real risks. However, despite the apparent popularity of the initial programs, the high costs of integrating the new technology temporarily interrupted its use and deterred other would-be early adopters.[4]

With technology advancing in leaps and bounds and related costs coming down in the 2000s, the doors were wide open for viable and successful telematics-based UBI programs. The integration of GPS-enabled two-way communication systems by automobile manufacturers in their cars helped familiarize drivers with telematics technology and the services it can offer. Existing car telematics systems, such as General Motor's OnStar, Lexus' Link and BMW's Assist, offer a wide range of services such as remote diagnostics, roadside assistance, emergency response and stolen vehicle location services. According to IHS iSuppli, approximately 38

[2] Ibid.
[3] Ibid.
[4] Weiss, Jim and Smollik, Jared. 2012. "Beginner's Roadmap to Working with Driving Behavior Data." Casualty Actuarial Society E-Forum, Winter 2012-Volume 2.

percent of the 2013 model-year cars in the U.S. were equipped with a telematics device.[5] By the end of 2018, the percentage of new cars available for sale in the U.S. market with embedded telematics will soar to 80 percent.[6] The section of the study on the technology of telematics (page 7) details further the technological options currently available to insurance consumers.

Consumers' growing enthusiasm for in-car connectivity in the last 10 years has added to the appeal of insurers' telematics-based programs. As applied in insurance, telematics is defined by SAS as "the use of wireless devices to transmit data in real time back to an organization. The data recorded in telematics devices can be used to develop more accurate pricing, improve the granularity of risk management techniques and reduce losses by enabling better claims assessments."[7] The more granular driving behavior and vehicle data can be collected the better the predictive models used to identify and analyze risks would be. A discussion of the data and modeling challenges facing insurers as they try to develop telematics UBI programs is found in the predictive models and analytics section of the study. (See page 14.)

Many U.S. insurers have telematics-based UBI policies available offering significant discounts to consumers who, according to recent market surveys, seem overwhelmingly favorable to the technology and the value it can offer.[8] With the technology advancing, insurers' telematics programs are expanding beyond premium discounts to include other value-added services aimed at increasing competitiveness and consumer loyalty.[9] ABI Research predicts global insurance telematics subscriptions to grow at a compound annual rate of 81 percent from 5.5 million at the end of 2013 to 107 million in 2018.[10] A more detailed account of the current state of the insurance telematics UBI market and its transformative effect on the car insurance industry as a whole can be found on the relevant section of the study. (See page 18.) Also, for the availability of telematics UBI programs across the country and the state legislative efforts regarding the use of telematics in auto insurance see the CIPR state survey in the appendix of the study.

Most existing telematics-based insurance programs use descriptive acronyms such as UBI, PAYD, PAYS or PHYD partly for marketing purposes. As consumers' decisions are driven by more than just price, these programs' added benefits and services should be instantly recognizable in the name and/or the description of the product. While these acronyms may be confusing and

[5] IHS iSuppli. 2013. "Telematics to Find its Way into More Autos in 2013." Market Insight, IHS Technology, March 21, 2013.
[6] IHS iSuppli. 2011. "Embedded Telematics in the Automotive Industry." White Paper, Nov. 22, 2011.
[7] SAS. 2013. "Telematics: How Big Data Is Transforming the Auto Insurance Industry." SAS White Paper, March 25, 2013.
[8] Towers Watson. 2014. "Usage-Based Insurance." U.S. Consumer Survey, July 2014.
[9] Telematics Update. 2014. "Insurance Telematics Report." March 2014.
[10] ABI Research. 2013. "Global Insurance Telematics Subscriptions to Exceed 100 million by 2018, but Auto Insurance Faces Dramatic Changes." June 6, 2013.

imprecise, the main idea they all try to convey is that the factors affecting premiums are generally where (location) the automobile is driven, how often (number of trips), how far (mileage) and how well (driver behavior.) A very important aspect of the development and wider adoption of telematics UBI is the design and marketing of these programs. An exploration of consumer decision-making can be found in the section on behavioral economics concepts used in designing telematics UBI programs. (See page 28.)

The key drivers for the rapid growth of telematics-based UBI are the numerous benefits accrued to both insurers and consumers alike. For consumers, among the benefits are possible lower premiums, enhanced safety and improved claims experience, while for insurers, the main benefits are reducing claim costs, better risk pricing, mitigating adverse selection and moral hazard, modifying risky behavior, and improving brand recognition and loyalty.

Additionally, telematics PAYD insurance programs provide wider social benefits by effectively reducing negative externalities resulting from private automobile use. With premiums tied to mileage, PAYD incentivizes drivers to drive fewer overall miles, thereby reducing accidents, congestion and fuel consumption, which will cut down carbon emissions, as well as lessen dependence on fossil fuels. The section of the study on consumer and societal benefits derived from the generalized use of telematics PAYD UBI explores these issues in greater detail. (See page 42.)

However, a major barrier remains for the public acceptance and the complete mainstreaming of telematics. Many consumers have concerns regarding the privacy of the data they share with insurance companies, and they question insurers' ability to safeguard their data given the recent cases of major corporate security breaches. However, consumers are gradually feeling less uneasy with the use or potential misuse of their private data (e.g., when and where they are driving) by insurance companies,[11] particularly following insurers' assurances regarding the limited use and storing of private data (e.g., GPS–detailed data) and not sharing such data with other third parties (e.g., police enforcement, marketing companies). Consumer concerns vis-à-vis the promise of telematics are discussed in the relevant section of the study. (See page 50.)

Consumer privacy issues are also addressed in existing state legal frameworks (e.g., California prohibiting the use of private data for most insurance purposes) as it is detailed in the CIPR survey of state DOIs in the appendix of this study. The transmission, storage and reporting of private data constitute a key concern for state regulators along with the rating factors used to determine UBI premiums.

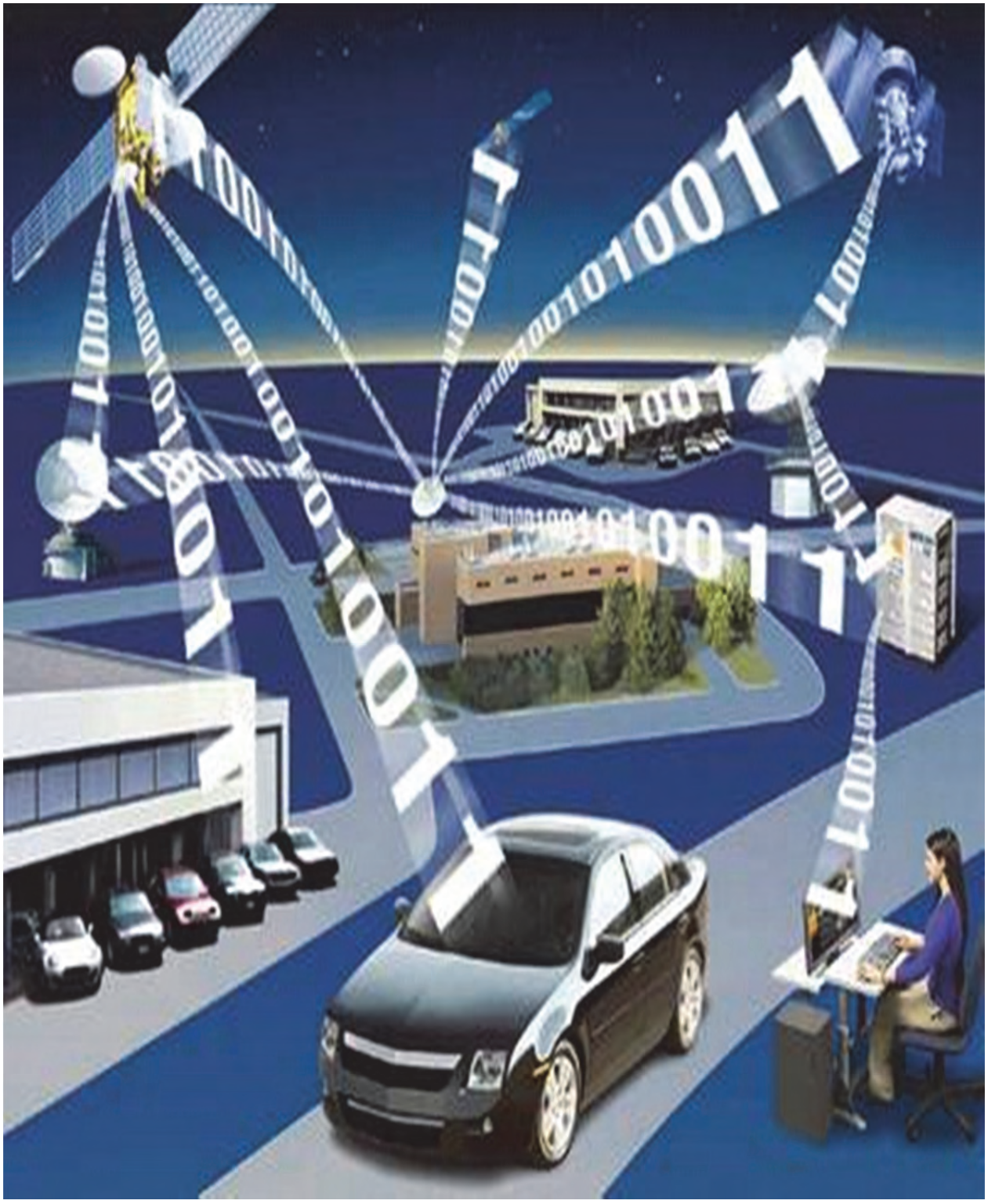
Generally, regulators in states with and without active telematics UBI programs, as shown in the CIPR state DOI survey, emphasize: 1) requirements for rates not to be excessive, inadequate

[11] Towers Watson. 2014. "Usage-Based Insurance." U.S. Consumer Survey, July 2014.

or unfairly discriminatory; and 2) the need for public disclosure and transparency. The survey showed that a number of states have introduced and passed legislation regarding the use of telematics devices and the choice of rating factors used. If the rating factors specified in statute do not include the standard UBI PAYD behaviors, as is in the case of California, the availability of telematics UBI programs is in question. In states encouraging the development of telematics, UBI-specific legislation has been enacted affording confidentiality protection for insurers' proprietary UBI solutions. Given the novelty of telematics and the regulatory challenges of dealing with technological innovation, state regulators will continue to focus on safeguarding consumers' rights while allowing for the development of new and potentially more effective insurance plans. The section on regulatory implications explores in-depth these issues facing state regulators. (See page 54.)

To assist in the development of a competitive marketplace for telematics-based PAYD UBI programs ultimately delivering on the promise to be beneficial not only to insurers but also to consumers and society as a whole, the Federal Highway Administration (FHWA) is funding multiple promotion efforts. The last section of the study provides details on federal initiatives and other PAYD telematics UBI-related activities. (See page 61.)

Telematics Technology in the Automobile Insurance Industry



Telematics Technology in the Automobile Insurance Industry

By NAIC Staff

Introduction

Data has traditionally been one of insurance industry's greatest and more valuable assets. The ubiquity of wireless connectivity, the increasing sophistication of in-vehicle electronics and machine-to-machine (M2M) communication is presenting the auto insurance industry with a historic transformational challenge. Insurers are investing on their ability to collect, store, manage and analyze vast amounts of variable data to solve complex problems in order to remain competitive and profitable. Auto insurance is fast becoming a big data industry, with telematics-based UBI poised to potentially change the business of insurance as we know it.

Depending on the frequency and length of trips taken, data sets can represent about 5MB to 15MB of data annually, per policyholder. An insurer with 100,000 insured vehicles can collect more than one terabyte of data per year.[12] The cost of the technology and the hardware—as well as the indirect cost for installation, maintenance and logistics—is one of the main limiting factors to the quicker and wider adoption of telematics.[13] As the technology becomes cheaper, the scalability and availability of telematics-based insurance programs is expected to grow at a faster rate.

The huge data demands in terms of storage and analytics, along with the lack of standardization in telematics devices, present significant challenges to insurers in their effort to successfully integrate telematics in their information technology (IT) infrastructure. The main players in the telematics ecosystem—auto manufacturers, insurance companies and telematics service providers—are competing for a larger slice of the market by developing their own telematics solutions and products. Choosing the technology that best fits their needs in order to start a UBI program is only the first challenge for insurers. The lack of publicly available driving behavior data that can be leveraged and the patented existing UBI technology are driving the high costs associated with launching and maintaining a telematics-based UBI program. The measure of success for insurers is centered on their ability to build an effective and profitable program without passing the costs of the device, installation and operation to consumers.[14]

[12] SAS

[13] Handel, Peter, Skog, Isaac, Wahlstrom, Johan, Bonawiede, Farid, Welch, Richard, Ohlsson, Jens, and Ohlsson, Martin. 2014. "Insurance Telematics: Opportunities and Challenges with the Smartphone Solution." IEEE, July 24, 2014.

[14] Cognizant. 2012. "The New Auto Insurance Ecosystem: Telematics, Mobility and the Connected Car." Cognizant Report, August 2012.

Current Telematics Technological Solutions

The telematics devices generally used by insurance companies are plugged into the on-board diagnostics (OBD-II)[15] port of an automobile or are already integrated in original equipment installed by car manufacturers. The type of data recorded and transmitted from the car varies according to the telematics technology chosen and by policyholders' willingness to share personal data. Sensors in telematics devices can capture data as simple as date, time, location and distance driven to more complex as speed, lane changing, cornering, acceleration and deceleration.

Currently, there are four distinct categories of telematics solutions available in the market:

- **Dongle**: The dongle is a self-installed device provided by the insurer to be used for a certain time, typically for six months. This is the most preferred solution in the U.S. market due to its relatively low cost and high reliability. Its "plug and play" low cost makes it the most suitable choice for new and emerging telematics UBI markets. The dongle is typically installed by the driver, is re-usable, can be transferred to another vehicle, automatically turns on with the car's ignition, generates high-quality and secure data on location and driving style, and can be bundled with other value-added services. However, along with its many strengths, the dongle has a number of weaknesses, such as the fact that it can only be used in modern vehicles, is vulnerable to fraud as it could be tampered since it cannot be hard-wired into the car's electronics, and will soon (12 to 18 months) be technologically obsolete.[16]
- **Black box**: The professionally-installed black box, popular across Europe, is considered to be one of the most secure and reliable solutions. The black box can be used with both PAYD and PHYD, but it is most suitable for the latter since it can provide some of the most in-depth and detailed data on driving behavior. Because PHYD plans tend to be the most sophisticated of the telematics, UBI products require devices like the black box with integrated accelerometers to track a variety of performance data like speed, g-forces in hard cornering and braking. The black box, in addition to its own sensors, can use the vehicle's internal sensors by linking with its electronic control unit (ECU). The black box is also ideally suited for first notice of loss (FNOL) services as it is fixed in the car chassis, providing early notice in the event of theft and valuable information for forensic crash reconstruction in the case of an accident. The black box is also preferred for tracking driving behavior data (DBD) of young and inexperienced drivers. However, it

[15] OBD is a computer-based system built into all 1996 and later light-duty vehicles and trucks, as required by the Clean Air Act Amendments of 1990. OBD systems are designed to monitor the performance of some of an engine's major components, including those responsible for controlling emissions. The OBD-II port is the U.S. Environmental Protection Agency (EPA) standard allowing single devices to query the on-board computer(s) in any vehicle.
[16] Telematics Update.2014. "Insurance Telematics Report 2014." Insurance Report, Telematics Update.

is not portable, and it tends to be the most expensive solution in the market with high installation and administrative costs.

- **Embedded**: As of the end of 2013, there were 11 car manufacturers with embedded telematics equipment in vehicles. While early on, embedded telematics provided services such as remote diagnostics, navigation and infotainment services, now they can deliver UBI services. The embedded module connected to the vehicle's ECU is able to record and transmit a wealth of data about the vehicle's performance. The strengths of embedded telematics range from product differentiation to improved customer relationship management and potentially lower costs in the case of product recalls.[17] Some importance challenges with embedded telematics are the comparatively high cost for the consumer (most are subscription-based), lack of standardization, compatibility with insurance solutions and obsolescence. The lengthy product cycles of automobile manufacturers practically ensures that whatever cutting-edge telematics technology gets designed for a particular car, it will be nearing obsolescence by the time the car hits the market.[18]
- **Smartphones**: Mobile telecommunication technology is the latest tool in telematics, with smartphones working as stand-alone devices or linked to vehicles' systems to transmit a variety of information to and from the car. Smartphones are an ideal telematics solution as they are typically equipped with a host of relevant sensors, such as GPS, accelerometers and gyroscopes. They also have large data storage capacity, or infinite with the cloud, and superior communication capabilities. There are no device, installation or data connectivity costs to the insurers (and no additional cost to the consumers) with smartphones-based UBI programs. Smartphones' computing power allows a big part of the data processing to be done on the device, helping to lower data handling and storage costs.[19] The large manufacturing volumes for smartphones exploiting economies of scale make the price–performance metric of the technical capabilities of the smartphone superior to many rivals, and it is still continuously improving over time.[20] However, despite the advantages the smartphone can offer, smartphone-based telematics programs have not taken over the market. A weakness possibly slowing down their deployment is the quality of data and the reliability of measurement data smartphones can provide.[21] Smartphones' accelerometer data is not

[17] Berg Insight. 2014. "The Global Automotive OEM Telematics Market." M2M Research Series, Sept. 4, 2014.
[18] Telematics Update. 2014. "Embedded telematics and the art of future-proofing." June 12, 2014.
[19] Telematics Update.2014. "Insurance Telematics Report 2014." Insurance Report, Telematics Update.
[20] Handel, Peter, Skog, Isaac, Wahlstrom, Johan, Bonawiede, Farid, Welch, Richard, Ohlsson, Jens, and Ohlsson, Martin. 2014. "Insurance Telematics: Opportunities and Challenges with the Smartphone Solution." IEEE, July 24, 2014.
[21] Ibid.

calibrated, while the cellular gyroscopes need to be constantly adjusted based on the phone's changing positions.[22]

Insurers' PAYD UBI Telematics Programs

Progressive's Snapshot is a wireless device plugged into an OBD II port and records and transmits time, speed and harsh braking. Progressive has partnered with AT&T for network support. The Snapshot device collects the time of the day the vehicle is in operation, vehicle speed, mileage and frequency of hard stops. Progressive notes the device does not record and transmit the location of the vehicle because unlike other onboard devices, Snapshot does not currently have GPS functionality. According to the company, drivers' personal data received is not shared with any third parties, and Snapshot information is only used to resolve a claim if the policyholder permits it and will not be shared unless it is required to prevent fraud.

Progressive's telematics UBI technology is covered by 598 patents relating to systems for monitoring and communicating operational characteristics and driving behavior. While the technology is available to other insurers via licensing agreements, a number of these patents, generally related to commercial applications, have been challenged by competing insurers.[23]

In March 2014, Progressive announced it had already reached more than 10 billion miles of collected driving data with its telematics Snapshot program.[24] Additionally, the insurer stated it is exploring new tracking methods, such as mobile applications and GPS, to capture new driving factors. These new factors could then be added to its existing database of driving data to further refine predictive models. Similarly to the Progressive Snapshot program, Allstate's Drivewise employs a telematics device installed in the vehicle's diagnostic port. Allstate has also partnered with AT&T to support and provide connectivity for its telematics devices. The device records the time and location of the vehicle during trips, the number of trips per day, the speed at which the vehicle is traveling, hard breaking and mileage.

According to Allstate, average driving performance on the factors above would not earn policyholders any discounts. A high number of speeding miles, braking events, high annual miles driven or high-risk-hours driving (e.g., during the night) may actually reduce, and in some cases even eliminate, any potential savings a driver had earned. Drivewise participants can monitor their behaviors and view potential discounts by using a smartphone app.[25]

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[22] Verisk Telematics. 2014. "Telematics Rivals the Traditional." Sept. 3, 2014.
[23] Insurance Networking News. 2014. "Progressive UBI Patents Cancelled." Insurance Networking News Online.
[24] Progressive. 2014. Progressive Snapshot reaches 10 billion mile mark [Press release]. Retrieved from *www.progressive.com/newsroom/article/2014/march/snapshot-ten-billion-mile/*.
[25] Allstate. 2015. Drivewise. Retrieved from *www.allstate.com/drive-wise*.

State Farm's telematics solution, unlike Progressive and Allstate, uses a third-party technology. The Drive Safe & Save program offered to drivers by State Farm works with existing telematics technology embedded into vehicles such as OnStar and SYNC and with an In-Drive device provided by Verizon. Drivers who enroll in the program have to pay an annual subscription after the first year, which they receive for free. The recorded data includes, miles driven, acceleration, hard braking, sharp turning, speeding and time of the day the vehicle is driven. State Farm's solution provides some additional services like roadside assistance, maintenance alert and stolen vehicle locator.[26]

Although all State Farm's third-party solutions use a GPS tracker, the company states it only records the general location (within 40 miles) of where the vehicle is driven and does not share that private information with any third parties, except in certain cases as required by law.[27]

The Hartford's TrueLane solution relies on a telematics device that plugs into vehicles' OBD-II port. The device collects and transmits drivers' data to the company using cellular phone signal.[28] National General's telematics UBI program is based on General Motor's OnStar connectivity to confirm miles driven, making it available only to those vehicles equipped with OnStar.[29] Nationwide's SmartRide also employs a plug-in device that collects only driving behavior data and GPS information to detect drivers' location. Drivers can go online to track their discount and get personalized feedback about their driving trends.[30]

Data Challenges

Aside from the choice of the most appropriate device, the other technological challenge is achieving a critical mass of data necessary for an effective telematics. Abstracting from cost considerations, given the right technology tools and information infrastructure, collecting and analyzing massive amounts of driving behavior data is within reach. However, the insurance industry, for the most part, has not yet moved to richer and more granular data that includes not only driving behavior, but also environment (i.e., road type and conditions, traffic patterns, etc.) and still depends on exposure-related driving variables such as mileage, duration of driving, and number of braking or speeding events, which are just secondary contributors to risk.[31]

[26] State Farm. 2015. "Drive Safe & Save with In-Drive." Retrieved from *www.statefarm.com/insurance/auto/discounts/drive-safe-save/indrive*.
[27] Ibid.
[28] The Hartford. 2015. TrueLane. Retrieved from *www.thehartford.com/auto-insurance/truelane-savings*.
[29] National General Insurance. 2015. "Low Mileage Pay-as-You-Go." Retrieved from *www.nationalgeneral.com/auto-insurance/smart-discounts/low-mileage-discount*.
[30] Nationwide. 2015. SmartRide. Retrieved from *www.nationwide.com/smartride*.
[31] Tamir, Asaf. 2014. "Driving for Change." Visualize, Q2 2014 Issue, Verisk Analytics.

Collecting the right data is necessary if the aim is to understand and adequately model risky driving behavior. For insurers to be and remain competitive over time in the new telematics UBI market, they must be able to collect and analyze the right data. Collecting the wrong type of data would quickly render insurers' telematics UBI program mostly ineffective, with only limited benefits. The one sustainable solution to this problem is rich data that can ensure, particularly as analytics continuously improve, a competitive telematics UBI program for many years to come.[32]

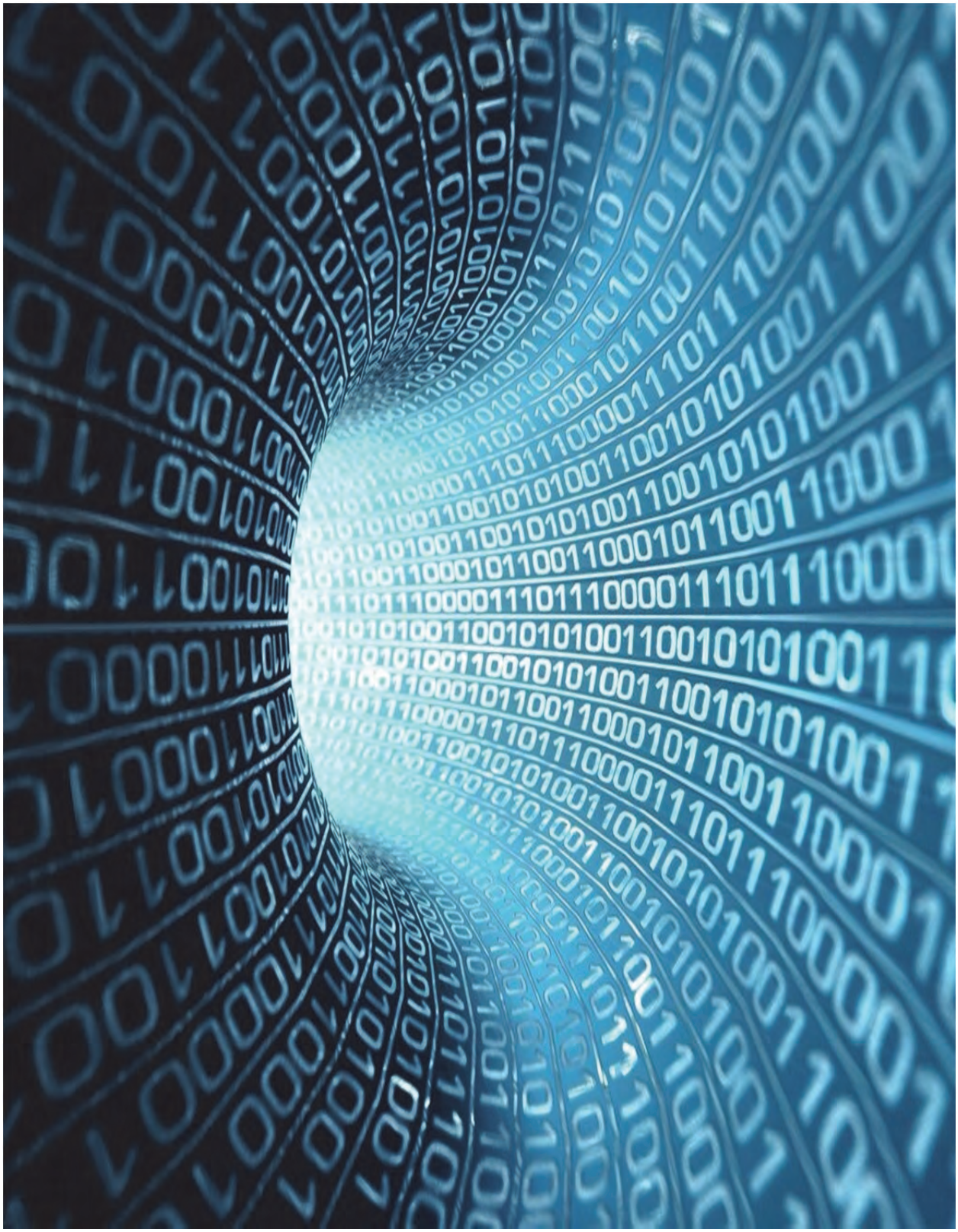
Moreover, the right data has to be appropriately communicated to the end-user in order to be really effective. The standardization of telematics data collected and reported to insurers for the purpose of making risk decisions is a necessary and important step for effective analytics and widespread telematics adoption. The Association for Cooperative Operations Research and Development (ACORD), a global standards development organization, is actively working on standardizing data elements involved in delivery of telematics data to insurers in order to improve analytic consistency and reduce the need to support multiple data interfaces. As there are multiple representations of the data, from any of the many devices available—to a cell tower/satellite to the device manufacturer, to the data aggregator, to the insurer—ACORD is engaged at the final step by striving to ensure data is delivered in a standard format to all insurers.[33]

Once the right telematics data is delivered to insurers, it is critically important to be able to make sense of the data collected in order to understand specific driving events and their context. In reality, no one braking event is the same as another. A real dynamic environment is far more complex, and it cannot be modeled by simply counting how many times a driver applies the brakes. Braking while traveling at low speeds on a rural road is much less risky than aggressive high-speed braking on a highway. While it can be very challenging to make sense of the various driving events and the permutations of their environmental characteristics, an effective analytics platform should be able to differentiate, for example, between types of braking events and how and where they took place in order to assess their true overall contribution to risk.[34]

Rich PAYD variables are the best way to understand how drivers behave under real conditions and to help sustain telematics UBI risk models over many years. For most insurers, telematics data provides the foundation for understanding how a person drives and under what type of conditions a person drives, as well as the basis for more sophisticated data modeling.

[32] Tamir, Asaf. 2014. "Driving for Change." Visualize, Q2 2014 Issue, Verisk Analytics.
[33] ACORD. 2014. "Property & Casualty Program, Activity and Implementation Report." ACORD Standards Program Activity Report, September 2014.
[34] Tamir, Asaf. 2014. "Driving for Change." Visualize, Q2 2014 Issue, Verisk Analytics.

Telematics UBI Modeling and Analytics



Telematics UBI Modeling and Analytics

By Robin Harbage, Director, Towers Watson

Introduction

Usage-based insurance has been in development since the 1990s. The original research relied on data collected from telematics devices professionally installed in automobiles either in the manufacturer factory or by a technician equipping an aftermarket device. After a defined period of monitoring the vehicle operation, the insured is provided with a new rate that uses the driving experience as a part of the rating algorithm. Almost no insurers base the entire premium on just the driving behavior, and most still largely rely on the common proxy variables approved for use in their jurisdiction.

At the top of the list of the key issues facing insurers trying to adopt or expand a telematics-based UBI programs is the ability to build predictive loss cost models that identify behaviors indicative of unsafe vehicle operation.

Predictive Models

Current loss cost models for telematics-based UBI products are largely of two types. One type relies on total mileage, time of day and a set of predefined events. The “event counter” scores are limited in their capability because they are based on the assumption that a few harsh braking, acceleration or cornering events constitute the universe of variables to predict loss costs based on patterns of vehicle operation.

A second approach is based on collecting much more granular data about vehicle use on a second-by-second basis, or even slightly more granular as needed for accelerometers, and then using the more granular detail to research the predictive power of a host of vehicle operation characteristics in a very contextual basis. An example might be to observe the distribution of g-force when changing heading by more than 45 degrees at greater than 45 mph. If the researcher chooses a series of thresholds based on what percentage of the turns actually indicate that behavior and then validates which of the threshold events is most correlated with actual insured losses, the researcher may identify an event that adds to the predictive power of an existing loss cost model. This type of continual research and refinement can lead to increasingly more predictive models over time as it was discussed in the previous section. However, it requires the insurer to collect highly granular data and is improved by recording GPS coordinates and other information which allows the insurer to place the events in the context of road type, sunlight or darkness, weather, road speed limit, etc.

There are several distinct differences between these two approaches of using a predefined set of events or refinement through collecting granular data. First, the granular data allows the researcher to identify new predictive variables much more quickly as they do not need to guess at new events which might be predictive, and then reconfigure the collected data and wait for sufficient new data to be collected before testing the value of the new characteristic. With granular data, the new variable can be created from current historical data and tested based on previously collected trips and losses.

Another advantage to granular data is that the researcher can identify driving behaviors that can be described in a manner that the operator may be coached to correct hazardous behavior to improve their driving and the road safety.

Vehicle operation characteristics may also be correlated with fuel consumption, so the vehicle operator may be coached on behaviors to improve fuel consumption and save fuel. The key to this accelerated learning is the type of data collected and the ability to place the collected data in the context of road type, speed limits, weather and other contextual information which allows for increasingly more accurate loss cost models and better contextual information for the consumer. The challenge for regulatory bodies is to balance the desire for privacy protection against the value of allowing consumers to voluntarily join programs where their data can inform and improve models which will lead to the ability to coach for behavior change that will lower loss costs, improve fuel consumption and save lives.

Tower Watson's DriveAbility®

Towers Watson has taken a leadership role globally in assisting with development of UBI programs. Beginning in 2008, Towers Watson has worked with more than 45 clients on six continents in the development and operation of the clients' UBI programs. These engagements have taken a number of different approaches, from day-long workshops to introduce company management to the concepts of UBI, to long-term engagements in which Towers Watson manages all telematics data for the insurer and provides DriveAbility vehicle operation scores for each enrolled vehicle.

The data management and scoring service includes analytics to create UBI models and file those models for approval with the regulatory authorities for the clients' geographic jurisdictions of operation. These filings include all actuarial support. The DriveAbility score is based on an expected pure premium relativity, but it is up to each individual subscribing insurer to file their own proprietary rates using the DriveAbility score.

One of the biggest challenges for Towers Watson's clients is the collection of sufficient vehicle operation data to develop a predictive model of vehicle operation correlated with expected loss

costs. The DriveAbility database, which supports Towers Watson's UBI services, includes all of the telematics data from a group of global insurers. Each insurer contributes all of its telematics data and all of the associated policy and loss data for the enrolled vehicles. Each insurer has access to its own data, but only Towers Watson has access to the combined data, which is not shared with any of the contributing companies.

This telematics data includes very granular information collected on a second-by-second basis for each trip, and is linked with the insured policy and loss data for the UBI-enrolled vehicles. The database also includes associated external data such as maps, road type and weather matched with each vehicle and trip. The loss data is linked to the precise point in each trip where the loss occurred. This matching allows Towers Watson to perform unique analytics in which all vehicle operation behaviors can be assessed during trips leading up to an accident, and commonly observed behaviors can be noted for testing in each update of the scoring model. Through this method, Towers Watson has identified a number of vehicle operation characteristics which are not only highly correlated with losses, but are actually believed to be causative of losses.

Using actual vehicle operation has been proven to be significantly more predictive of expected loss costs than proxy variables commonly employed for auto insurance ratemaking. Towers Watson's DriveAbility score has been demonstrated to be at least three times more predictive than any rating variable previously employed when comparing the difference in loss costs between the riskiest decile of insured vehicles and the safest decile.

Towers Watson's goal is to not only produce scores which are highly predictive of future losses, but also to develop driver feedback programs which can improve driving behavior and lead to significantly safer roadways. Evidence exists in Canada, the UK and the U.S. that driving behavior is improved through the operation of UBI programs. This will only become more successful as better feedback and coaching is developed that identifies the most risky behaviors and those behaviors that are most controllable by the insured.

The Insurance Market for Telematics UBI

The Insurance Market for Telematics UBI

By NAIC Staff

Introduction

Auto insurance markets are changing rapidly. In the past, auto insurance policies were rated on a small number of rating factors, with each having a multiplier effect on the overall rate. A policyholder might receive a quote based on the fact the person was a 30-year-old married woman who drives less than 15,000 miles per year with the car garaged in a particular ZIP Code.

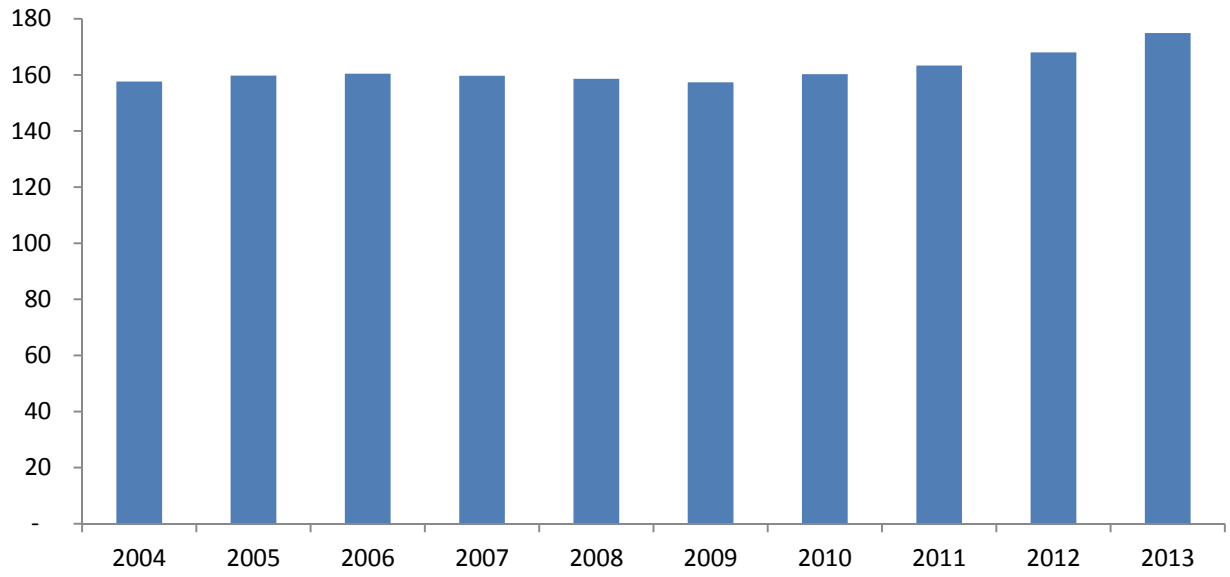
As technology has evolved and as the price of data has fallen, rates can now be produced through millions of variables in a multivariate analysis. Factors can include gender, age, driving experience, marital status, education, occupation, credit score, multi-policy discounts, location, annual mileage, vehicle use, lapse in coverage and type of vehicle, just to name a few.

As illustrated in the previous sections of this study, the next step in the evolution of auto insurance rating is here via telematics. Through telematics, risks can be rated on an individual basis. An insurer can now technically identify, measure and rate a particular person's driving ability. An insurer can now know when, where, at what speed and how a person drives—i.e., the number of hard brakes, sharp turns and other potentially dangerous maneuvers.

Current State of Personal Auto Insurance Market

The auto insurance market is the largest insurance market segment in the U.S., and it is fiercely competitive, as insurers strive to attract the more profitable low-risk drivers. Hundreds of auto insurance writers are essentially competing for the same premium base, which is not growing. As vehicles and roads are becoming safer, premiums are falling. In such an environment, the opportunity for growth appears to be limited. Total premiums in the private passenger auto insurance market (liability and physical damage) have only grown from $158 billion to $175 billion in the last 10 years (Figure 1.) Over this period, the market has not even kept up with inflation. For some large insurers showing strong growth, most of the growth is primarily a result of increasing their market share. The stagnant growth in a competitive market makes the attraction, retention and accurate rating of policyholders all the more important, and any tools that can help achieve these goals are immensely valuable.

Figure 1: Total Private Passenger Auto Direct Written Premiums (2004-2013 in $Billions)
Source: NAIC



The Telematics Market within Auto Insurance

The telematics UBI market is still a fast-growing developing market, with insurers trying to compete for a bigger slice of the $170 billion auto insurance market. Although the use of telematics has accelerated in recent years, it is difficult to estimate with any accuracy the overall size of the market. A July 2014 Towers Watson survey found that 8.5 percent of consumers had a UBI policy in force in the prior 17 months, up from 4.5 percent in February 2013. Most large auto insurers, with the exception of GEICO, have publicly discussed their venture into the world of UBI for underwriting and rating purposes. According to SMA Research, approximately 36 percent of all auto insurance carriers are expected to use telematics UBI by 2020.[35] Based on the CIPR survey of state insurance departments (see appendix), in all but five jurisdictions—California, New Mexico, Puerto Rico, Virgin Islands and Guam—insurers currently offer telematics UBI policies. In 23 states, there are more than five insurance companies active in the telematics UBI market.

Progressive appears to be the most active and largest auto writer using telematics-based UBI, with its well-known and heavily advertised Snapshot program, currently available in 45 states and Washington, DC. Progressive was among the very early adopters of the telematics technology introducing its UBI program in March 2011. Progressive has an estimated $2 billion

[35] SMA Research. 2013. "How Do Insurers and Agents Think Telematics Will Impact the Industry." SMA, Insurance Telematics ExecuSummit, Nov. 6, 2013.

in premiums and 2 million customers in its Snapshot auto insurance program. If the Snapshot program were a stand-alone insurer, it would be a top 15 writer of private passenger auto insurance by itself.

The discount offered to drivers who enroll in the Snapshot program is based in the first 30 days and applied for the remainder of the policy's term, typically six months. The discount set in the first six months continues to apply as long as nothing else changes. Policyholders who tend to drive less can get discounts on their premiums up to 30 percent, according to Progressive. Premiums can only be discounted and cannot be negatively affected by participants' driving behavior data.[36]

Although telematics was pioneered by Progressive, currently more than half of the major insurers in the U.S. have an active telematics UBI program, and several others are conducting market trials for their own UBI offerings.[37] Towers Watson notes U.S. insurers, representing close to 75 percent of the auto insurance market, have telematics programs or are currently active in preparing to deploy them.[38] Frost & Sullivan projects telematics UBI activations in the U.S. market will increase from 137,000 in 2010 to 1.1 million by 2017, a compound annual growth rate of 34.7 percent.[39] The major providers of telematics solutions wrote approximately $79 billion in total auto insurance in 2013 (includes traditional as well as telematics UBI policies) or about 45 percent of the aggregate industry premiums written (Figure 2.)

Figure 2: Premiums Written by Main Telematics UBI Providers (2013 Year-End)
Source: NAIC

NAIC Code	Company/Group Name	Written Premium
176	STATE FARM GRP	32,353,629,762
8	ALLSTATE INS GRP	18,067,452,324
155	PROGRESSIVE GRP	15,358,291,116
140	NATIONWIDE CORP GRP	7,279,834,888
3548	TRAVELERS GRP	3,178,691,672
91	HARTFORD FIRE & CAS GRP	2,349,919,064

[36] Progressive. 2014. "Progressive Snapshot reaches 10 billion mile mark" [Press release]. Retrieved from *www.progressive.com/newsroom/article/2014/march/snapshot-ten-billion-mile*.
[37] Cognizant, 2012. "The New Auto Insurance Ecosystem: Telematics, Mobility and the Connected Car." Cognizant Reports, August 2012.
[38] Towers Watson. 2013. "Usage-Based Insurance." Presentation at the Spring Meeting of the Casualty Actuarial Society. May 2013.
[39] Frost & Sullivan. 2011. "Strategic Analysis of North American Market for Telematics-enabled Usage-based Insurance." March 9, 2011.

Allstate launched its own telematics solution, Drivewise, in January 2011, and it is currently available in 28 states. The discount applied is based on the driver's performance rating, which is calculated on a rolling basis using 12 months of driving information. Policyholders enrolling in the program receive an automatic discount of 10 percent with additional savings calculated and applied every six months, with total discount of up 30 percent.[40]

In 2012, State Farm expanded its Drive Safe & Save initiative adding a telematics solution called In-Drive. Travelers' IntelliDrive telematics UBI solution was launched in October 2011 and it is currently available in eight states. According to State Farm, drivers initially receive an automatic five percent discount for signing up and subsequently they may earn discounts of up to 50 percent. The discounts are calculated based on 30-day monitoring periods with premiums adjusted at renewal every six months. State Farm states that while not everyone is guaranteed a discount, which is contingent on drivers' monitored behavior, no policyholder should see an increase in premiums after participating in the program, except if they already receive a low-mileage discount (less than 7,500 miles annually) and record an excess of that.[41]

The Hartford also offers its own telematics device called TrueLane, which was launched as a pilot in 2012 and is currently available in 34 states. Instead, TrueLane uses telematics to get a clear picture of policyholders' driving habits and adjusts their rates accordingly. TrueLane can potentially save policyholders up to 25 percent on their auto insurance premium. [42]

National General offers a Pay-As-You-Go insurance program to OnStar subscribers, with discounts exclusively based on mileage driven and confirmed by the OnStar vehicle diagnostics reports. The National General OnStar program is currently available in 35 states. Policyholders can get discounts ranging from 7 percent to 54 percent depending on how many miles they drive per year, with 15,000 being the maximum allowed.[43]

Nationwide SmartRide uses a plug-in telematics device to monitor and collect data and offers discounts based on driving behavior data like some of its competitors. Participants receive an immediate 5 percent for signing up, and then based on their data, they can qualify for discounts up to 30 percent. Similar to the competition, participation in the SmartRide will not negatively affect premiums.[44]

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[40] Allstate. 2015. Drivewise. Retrieved from *www.allstate.com/drive-wise*.
[41] State Farm. 2015. "Drive Safe & Save with In-Drive." Retrieved from *www.statefarm.com/insurance/auto/discounts/drive-safe-save/indrive*.
[42] The Hartford. 2015. TrueLane. Retrieved from *www.thehartford.com/auto-insurance/truelane-savings*.
[43] National General Insurance. 2015. Low Mileage Pay-as-You-Go. Retrieved from *www.nationalgeneral.com/auto-insurance/smart-discounts/low-mileage-discount*.
[44] Nationwide. 2015. SmartRide. Retrieved from *www.nationwide.com/smartride*.

Insurers who adopted telematics early on gained a great competitive advantage as they were able to not only increase their market share by offering better pricing and services, but also win consumers' loyalty. In a new segment of the market, particularly one based on a game-changing technological innovation, such as telematics, retaining consumers is a less costly proposition than acquiring them. Having telematics UBI in their business mix can be a powerful tool in attracting new consumers as well as retaining them. Insurers are keenly aware that the first telematics device consumers install will most likely be their last, and they will almost certainly remain with their existing carrier as technology evolves.

By deploying telematics programs, insurers can provide discounted coverage underwritten on the risk consumers personally pose, thanks to the accumulated data on their driving behavior. According to consumer research by LexisNexis, 36 percent of insurance consumers would consider switching insurance companies in order to participate in a telematics PAYD UBI program if they are offered discounts of 10 percent as rewards for safe and better driving behavior.[45] Leading auto insurers assert using telematics UBI can save consumers 10 percent to 15 percent on their premiums and could soon increase to 30 percent based on accumulated data on their driving behavior and car usage.[46] Discounts are particularly important to lower-income drivers, whose insurance premiums are often higher than their car loan payments despite their clean driving record.[47] Additionally, to further differentiate themselves from other insurers, telematics UBI carriers can enhance their consumers' experience with a number of value-added features tied to their telematics program.

Competing insurers entering the market later are placed at a serious disadvantage because they lack the valuable large and statistically credible UBI data sets to lure existing customers away from their insurers with better pricing. Also, late adopters may end up competing with each other for a shallower pool of riskier drivers.

Consumer Acceptance

One of the biggest and most obvious challenges to telematics adoption in the auto insurance world is the degree to which consumers are ready to accept the product. Recent surveys have shown a majority of auto insurance policyholders are at least open to the idea of telematics. A January 2014 survey by Deloitte found more than 25 percent of respondents would allow monitoring of their driving without any minimum discount in return. About the same percentage of people were comfortable with the use of telematics if the premium discount was

[45] LexisNexis. 2013. "Consumers & Usage Based Insurance." Lynx Research.
[46] Cognizant, 2012. "The New Auto Insurance Ecosystem: Telematics, Mobility and the Connected Car." Cognizant Reports, August 2012.
[47] Cognizant, 2012. "The New Auto Insurance Ecosystem: Telematics, Mobility and the Connected Car." Cognizant Reports, August 2012.

high enough. Less than half actually said they would not want their driving monitored regardless of any savings. The younger consumers seem to be more receptive to the idea. Nearly two-thirds of those in their 20s were receptive to telematics, compared to 44 percent of those over 60.

Ongoing Value

Auto insurers can attract new customers by enticing them with not just lower premiums, but also add-on services. These include immediate feedback on driving, alerts related to road or weather conditions, tracking or locating stolen vehicles, roadside assistance, or monitoring or geo-fencing youth drivers. Several consumer preference studies indicate consumers have a strong desire for ancillary services, such as vehicle maintenance reports, fuel management and concierge services. Insurers offering these value-added services have the potential to increase customer satisfaction, add new revenue streams and differentiate themselves from other insurers. Once policyholders become used to an insurer's ancillary benefits, they are less likely to move to another carrier.

There has been a great deal of focus recently on the gamification or the application of gaming concepts to a broader commercial experience. Policyholders become active participants in safe driving as they earn rewards and compete against friends or others in driving more safely or driving less and being more green. (See the Benefits section of this study for more details.) Policyholders will drive less and drive more safely in order to get instant feedback and feel not just a sense of pride, victory or accomplishment, but win actual tangible prizes or reductions in premium. To many policyholders, the customer experience goes from being one of paying a premium and getting nothing in return to one of competition, interaction and fun. Like the add-on services, these policyholders find value in the whole experience and are more loyal customers.

How Telematics Can Change the Auto Insurance Industry

The use of telematics has already changed the industry, and it has the possibility of revolutionizing the industry. As the population becomes more accepting of technology and as the generation that has grown up surrounded by technology in their everyday life grows, it is likely that the percentage of policyholders ready to adopt telematics will increase dramatically.

Traditional rating factors tend to be proxies for risk. The idea of telematics is to actually measure risk on an individual level. Recently, actual mileage driven has been added to the more traditional factors such as age, gender and experience. Now telematics promises to add even more accurate factors to the equation by measuring actual driving behavior through events such as hard breaking or swerving. Ultimately, an insurer will measure how a car is driving as well as the situation, such as time of day and weather and traffic conditions. Technology, due to

advancements and reductions in price, allows insurers to directly measure factors that determine risk. By using UBI rating factors instead of traditional rating proxies, insurers could offer an 80 percent discount on the best drivers and still be profitable.[48] The competitive advantage gained by insurers with a telematics UBI program over non-UBI insurers is enormous, especially considering that even late adopters may not be able to catch up due to adverse selection.

In telematics' infancy and in the near future, it is likely that insurers actively pushing their telematics programs will attract good risks, partly by promising discounts. It makes sense that someone who drives a lot, at unusual times and unsafely probably will not sign up for these programs. The early adopters will bring in good drivers and can rate them at fairly cheap prices. As the use of telematics grows, companies will have to include both increases and decreases to rates in order to avoid adverse selection. More precise pricing will reduce or eliminate cross subsidies. Currently risk characteristics grouped together in the process of risk classification are priced on an average, so some individual risks are above the average and some are below.

As detailed in the Technology section of the study, many large insurers currently have their own telematics programs, usually using their own data, as it has been detailed in the technology section of the study. Medium and small insurers may use consultants or third-party vendors because they do not have the expertise or the vast amount of data needed to have a telematics program. Those companies not rating correctly may be left behind. If a company is overcharging a good risk, it will lose that policyholder to a company with a cheaper, more accurate, rate. If a company is undercharging a bad risk, the company will lose money and not be profitable. Eventually, companies charging inaccurate rates will not be able to survive in the market. There is an incentive for insurers to use the technology because there will be adverse selection where riskier drivers may be more likely to use insurers not using a telematics system.

The use of telematics has the potential to reduce insurers' reliance on controversial rating factors. There are factors—such as credit scoring, occupation and education—that are used by many insurers but are not intuitive to policyholders why they are risk factors for auto insurance. Consumer advocates believe the use of these factors disproportionately harms certain disadvantaged classes. The use of telematics may eventually reduce the need for these factors. If a person's true driving behavior can be observed, measured and compared to others, insurers will be able to rate more accurately and may not need to rely upon credit scores, occupation, education or other traditional risk classification factors. Ultimately, what matters to an auto insurer is how a policyholder drives and how to accurately price for that risk.

[48] Verisk Telematics. 2014. "Telematics Rivals the Traditional." Sept. 3, 2014.

The use of telematics could have another dramatic effect on the industry by causing drivers to drive more safely. The degree to which an insurer can influence its policyholders' driving behavior is heavily dependent on the sophistication of its telematics program and its communication with drivers. Drivers receiving feedback on their driving behavior will be more likely to try to improve their behavior. They will wish to improve the behavior in order to be safer, and they will be incentivized to do so through lower premiums offered by their insurer. This is expected to reduce losses as well as rates. According to a study by the Brookings Institute, reducing miles driven correlates to fewer accidents and lower claims costs.[49] Thus, tying premium to miles driven encourages drivers to limit their vehicle use, lowering insurers' associated loss costs.

Policyholders will know that they actually have control over their rates. Previously, a policyholder had little control because rates were based on factors such as location, gender, age or credit score. These factors are difficult, or in some cases impossible, to change. Now a person can actually drive less or drive more safely in order to receive a better score and, therefore, reduced rates.

Obstacles to Growth

Insurers are currently exploring technologies that would allow mobile devices like cell phones to transmit the telematics data as discussed in the technology section. Challenges include battery usage and knowing whether the mobile phone is with a driver or passenger. If solutions can be found, it is promising as insurers would save the cost of purchasing monitoring devices for each user. With current monitoring devices usually placed on the car for only a limited time, the increasing use of a mobile device would improve data collection because it stays with the policyholder indefinitely through the term of the policy or life cycle of the customer. The potential for increased amounts of data is also critical to an insurer in order to create more accurate rating outcomes.

A potential obstacle to the expansion of the telematics UBI program could be Progressive's decision to patent telematics as strictly a proprietary technology, obliging other insurers to license the technology if they wish to market similar and competing UBI products. Recently, several of the patents were cancelled by the U.S. Patent Trial and Appeal Board, and while the decision may be a controversial opinion not shared by patent-holders, it could lead to a faster and more widespread adoption of the technology.[50]

[49] Jason E. Bordoff and Pascal J. Noel (2008), "Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity," *The Brookings Institution.*

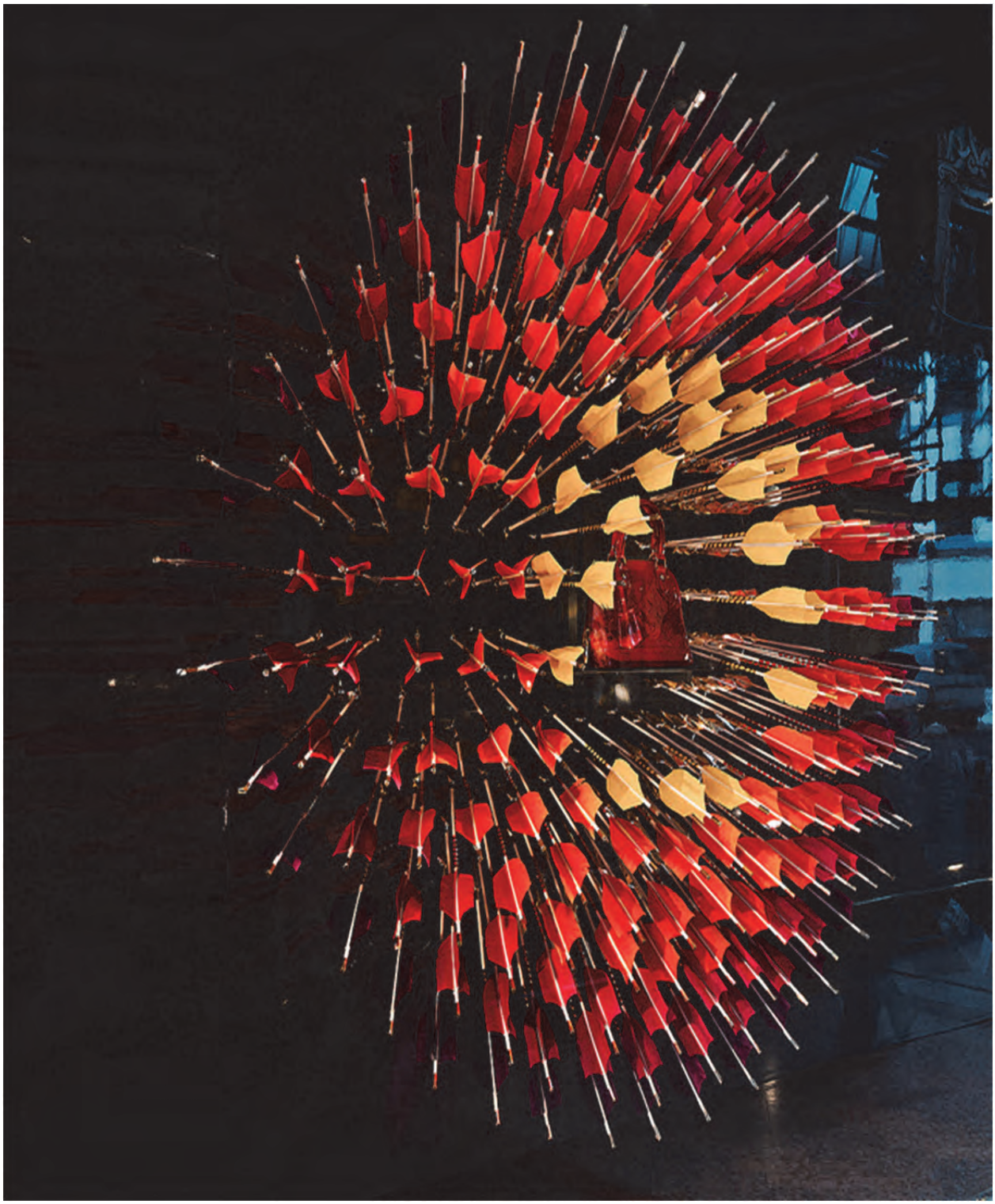
[50] Insurance Networking News (Online.) 2014. "Progressive UBI Patents Cancelled." March 27, 2014.

A further hindrance to the growth of the market is if a driver leaves an insurer with which he or she had a telematics device installed, the driving behavior data is property of the insurer and cannot be transferred to a new carrier to help price a new policy. One idea floating through the industry is the creation of a statistical agent to collect centralized telematics data, similar to what exists with credit scores for insurance. This would allow customers to shop around. A centralized agent would allow insurers to have additional amounts of information about a driver's driving behavior prior to becoming insured. The logistics behind this idea are not developed, but portability could dramatically change telematics.

The use of telematics may also introduce concerns about affordability if territorial rating is used, which is likely to harm those in economically disadvantaged neighborhoods. Similarly, older cars may drive differently and lead to higher rates. Telematics introduces the possibility of using the devise for claim adjusting. Consumers wonder if the decision to use a telematics device will be forced upon them by the insurer. Other concerns include whether telematics will be transparent so that drivers know what is being measured and have an opportunity to improve these characteristics and then see the resulting lower rate. If drivers have a full understanding of what metrics make up their telematics score and how to improve that score, they will have the tools to take action. This will allow drivers to improve their insurance rates by improving their score by either driving less or driving more carefully or in less dangerous locations or times. This reduces risk for all.

If telematics can be shown to reduce risks and encourage people to drive less or drive more safely, it is likely to have fairly widespread support from all parties. As an example, individuals receive insurance discounts for smoke alarms or seat belts, which encourages them to use those devices.

Applying Behavioral Economics Concepts in Designing PAYDAYS UBI Products



Applying Behavioral Economics Concepts in Designing PAYDAYS UBI Products

By Allen Greenberg, Federal Highway Administration

Introduction

Behavioral economics, a discipline combining economics and psychology to explain consumer decision making, offers insights on marketing and designing telematics PAYDAYS UBI products to maximize profitability, consumer acceptance and public benefits. Through behavioral economics, one can determine how different product designs and marketing could strongly influence both consumer acceptance of the product and how effectively the product encourages consumers to curb their driving.

By converting fixed insurance costs to per-mile or per-minute-of-driving charges, PAYDAYS insurance encourages voluntary reductions in driving that reduce congestion, air pollution and crashes, as it was discussed in the Benefits section of the study. General behavioral economics research findings strongly suggest that different product offerings among the myriad of PAYDAYS insurance product possibilities would result in substantial differences in vehicle miles traveled (VMT) and in the magnitude of related benefits. This section analyzes how PAYDAYS insurance plans are designed to attract and retain customers, and discourage driving. A pilot experiment is proposed to help illuminate consumer response to this kind of insurance program, and improve the application of behavioral economics principles to the design of PAYDAYS insurance products.

General Consumer Decision-Making

As a group, consumers avoid making decisions they see as complex, and if they cannot avoid such decisions, they often apply only minimal mental effort to the task. They rarely reconsider past decisions that continue to influence their current circumstances. In consideration of complex products, such as of telematics PAYDAYS insurance, this bodes ill for consumer adoption.

While consumers consider economic factors beyond just product price in their decision-making, such factors generally tend to have relatively little influence. Consumers typically formulate very rough budgets in their heads that cover short periods of time, with little economic concern for the long term. They consider savings opportunities only where potential savings appear to be significant relative to price, and they look for deals that make sense to them and appear fair. Consumers also tend to be biased toward accepting a default option even if better non-default

options are readily available. All this is especially true in markets where the products are complex.

Consumers are most likely to shop for new insurance when premiums rise or when changes occur in their household (the addition of a driver), circumstances (financial, employment, etc.) or vehicle (purchasing or leasing a vehicle). Financial pressure is a major motivator for changing insurance policies. For example, from October 2008 to March 2009, a period of sharp decline in the economy, 25 percent of surveyed car insurance shoppers reduced their insurance coverage, while 31 percent increased their deductibles. During this period, quotes for coverage on the website *www.Insurance.com* dropped by an average $100.[51]

Consumers readily categorize spending decisions into different budgets, such as food and transportation, and they tend to calculate trade-offs within each category without regard to changes in other budget categories.[52] Put another way, consumers may view spending related to driving within the broader context of their predetermined car insurance and travel budgets. This suggests advocates of PAYDAYS UBI seeking reduced VMT should persuade consumers they can actually reduce their car insurance budget relative to its size under traditional insurance.

Consumers generally appear to be more sensitive to their immediate cash flow needs than to longer term budgets (although this is less true for affluent consumers.) For example, when making car-buying or leasing decisions, the average consumer is much more sensitive to the size of the monthly payment than to the total number of monthly payments.[53] Because of consumers' cash-flow concerns, PAYDAYS UBI will be more effective in encouraging reduced driving if billing is frequent—thus reminding PAYDAYS UBI customers that they incur insurance costs every time they drive.

As noted above, consumers concern themselves with opportunities to save only when the potential savings seem significant relative to the price. Thus, if PAYDAYS insurance is sold in use-or-lose packets of 2,500 miles—about two months-worth for the average American driver—this may do little to discourage short and frequent trips. However, such packets would be likely to influence longer-term decisions, such as whether to join a carpool, purchase a commuter rail pass, or try to telecommute a couple of days per week. Conversely, two-week packets of PAYDAYS insurance might also encourage buyers to avoid or consolidate individual trips, while longer-term packets probably would not.

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[51] Kuykendall, Lavonne. 2009. "Drivers Looking to Cut Costs on Insurance," *The Wall Street Journal*, Marketplace, New York, April, 22, 2009, p. B4B.

[52] Thaler, Richard H. 1999. "Mental Accounting Matters," *Journal of Behavioral Decision Making*, Vol. 12, John Wiley & Sons, Hoboken.

[53] Gourville, John. 2002. "Use the Psychology of Pricing to Keep Customers Returning," *Working Knowledge*, Harvard Business School. Cambridge, September 2002.

Marketing PAYDAYS UBI as a better and fairer deal could help it gain acceptance. Consumers generally are very sensitive to the perceived fairness of the deal (transaction utility), and they are much more willing to spend on what seems like a good deal, regardless of the purely economic value they may derive from using a particular product or service.

Consumers are much more likely to choose a default option than an alternative, even if choosing the alternative involves no more effort than checking a box on a form. Thus, for PAYDAYS UBI to become highly successful, insurers should start offering it as the default. This propensity to pick the default has been shown in a variety of markets, including automobile insurance. In Pennsylvania, for example, where full-tort insurance coverage is the default option, more than half of drivers sign up while in New Jersey; where it is not, fewer than one in 12 consumers sign up.[54]

Consumer Responses to Financial Gains and Losses

One of the major lessons from behavioral economics, derived from microeconomics, is that consumers discount the future generally preferring present value far more than a higher value they could gain in the future. This is central in the design of PAYDAYS UBI pricing schemes in order to get the greatest reduction in mileage. Consumers will drive fewer miles if they have to pay for them now than if they are offered a rebate for miles not driven in the future.

Unfortunately, virtually all U.S. pilot projects testing consumer response to mileage pricing have not been designed to take advantage of loss aversion. These pilots give participants bank accounts which are incrementally depleted for each mile driven, with the money remaining at the pilot's end given to the participant. People perceive money that is given to them as a windfall, rather than as their own hard-earned cash that they saved through driving less, and they would, therefore, value it commensurately less. Thus, these pilot studies were far less effective at reducing miles driven than they would have been had there been direct mileage pricing.

Similarly, various PAYDAYS UBI policies in the marketplace are framed as offering low-mileage discounts instead of basing their premiums directly on mileage. This may result in comparatively higher mileage than if the products were to be framed the other way.

[54] Leonhardt, David. 2005. "Why Do So Many Consumers Choose Frills When Plain-Old Will Do? Pure Laziness," *The New York Times*, Business, New York, July 11, 2005.

Payment Frequency and Payment Method Affecting Propensity to Conserve

The timing and frequency of payments have a profound effect on the propensity to conserve. Part of this stems from peoples' general aversion to decision-making, especially regarding complex financial decisions whose consequences are not immediate and/or transparent. Thus, if PAYDAYS insurance could be purchased only in use-it-or-lose-it buckets of 2,500 miles, consumers would not worry about the financial consequences of short trips until they approach the bucket's mileage limit. On the other hand, with frequent payments, people would be acutely aware that their driving was costing them money, and they would make a conscious effort to conserve miles.

The form of payment also influences decision making. People tend to spend more freely when paying by credit card than by cash or check, because credit cards reduce the frequency of the pain of paying to once monthly and the impact of individual charges are somewhat masked by the size of the overall bill.[55]

Perspectives on Price Bundling

Consumers may prefer all-inclusive pricing over pay-per-use pricing schemes for a variety of reasons. People love to feel that they are getting something for nothing, even if the freebie requires paying far more for what the freebie is bundled with than what that something is really worth.[56] Nevertheless, unbundling, or pay-per-use pricing, has been shown to be an effective strategy in the marketplace if deployed with particular attention to consumer concerns, needs and desires.

Consumers often prefer buying in bundles partly because this way, they do not need to worry about usage. A number of the reasons consumers hesitate to accept pay-per-use schemes, which also apply to UBI, include: 1) difficulty to estimate usage costs; 2) laziness regarding tracking expenses; and 3) excessive concern they will pay a lot for those few times when they need to take longer trips, combined with undervaluing the savings that will accrue from driving less overall. Telecom industry research shows most consumers are ignorant of the price of individual phone calls, and may over-estimate the cost by a factor of three. Since bundled products seem to come with more price certainty than unbundled products, consumers demonstrate a general preference for bundled products. This is especially the case since "most

[55] Thaler, Richard H. 1999. "Mental Accounting Matters," *Journal of Behavioral Decision Making*, Vol. 12, John Wiley & Sons, Hoboken.
[56] Anderson, Chris. 2009. "Free: The Future of a Radical Price." Hyperion Books, New York.

people are risk averse and, other things being equal, will choose an option with a known price over one with an uncertain price."[57]

Not all purchasing in bundles is done by consumers to avoid the risk of paying more with pay-per-use pricing. Purchasing in bundles (e.g., all-you-can-use monthly gym memberships instead of single-use one-day passes) has been shown to be especially prevalent with health club memberships, because consumers typically overestimate how much they will use their memberships and also want to motivate themselves to use them more.[58] In the context of PAYDAYS UBI plans, this overestimation of personal discipline suggests that consumers see UBI pricing as offering even greater savings than they would typically ultimately realize. Thus, if consumers understand the benefits of driving less, and are optimistic about their ability to do so, UBI seems like a very attractive deal.

And while many consumers may still be reluctant to sign up for PAYDAYS—probably due to fear of the unknown—attracting them with a trial run can make the unfamiliar familiar, with positive results. Participants in a Minnesota PAYDAYS leasing simulation pilot—entailing a reduced fixed monthly vehicle charge in combination with a variable per-mile charge—who were randomly assigned the pricing treatment were substantially more likely than control group participants to be interested in securing a similar leasing arrangement and PAYDAYS UBI plans after pilot completion.[59]

The preference for purchasing some products in bundles is not boundless, and a maximum monthly charge might be useful in encouraging acceptance of UBI plans. Among six separate PAYDAYS focus groups observed in Minnesota, participants showed substantial preference for scenarios where the maximum monthly lease payment was capped, even though mileage charges in excess of caps were rolled into subsequent bills. The latter presumably would keep consumers from driving excessively after breaching the mileage corresponding to the maximum monthly payment.

Surveys associated with the Minnesota leasing pilot showed that interest in leasing tripled (from 6% to 18%) as the top choice of respondents for acquiring their next vehicle when new leasing plans were presented that combined a reduced fixed monthly charge and a variable mileage charge. When two variants of this new type of lease were presented, two-thirds

[57] Bonsall, Peter, et al. 2004. "Road User Charging—Pricing Structures." Final Report for the Department for Transport on PPAD 99/159/002. University of Leeds, England, September 2004.
[58] DellaVigna, Stefano and Malmendier, Ulrike. 2004. "Contract Design and Self-Control: Theory and Evidence," *The Quarterly Journal of Economics*, Vol. 119, Issue 2, MIT Press, Cambridge.
[59] Minnesota Department of Transportation. 2005. "Pay-As-You-Drive Experiment Findings: Mileage-Based User Fee Demonstration Project Technical Memorandum," Draft prepared by Cambridge Systematics, Inc., Aug. 29, 2005.

preferred the option with the higher per-mile price and lower fixed-monthly price over the reverse.[60]

But introducing too many pricing schemes at once could be risky by creating confusion and discouraging consumers from trying something new. As the market for cell phone services suggest, however, PAYDAYS UBI could ultimately be offered by different companies in many different forms, but behavioral economics suggest that individual companies would be wise not to confuse customers with too many different offerings.

A number of surveys and real-world marketing experiences of insurance companies show how consumers tend to react to bundled PAYDAYS insurance versus traditional insurance. The survey in Minnesota found that 32% of respondents would prefer PAYDAYS UBI pricing over having to pay traditional insurance premiums.[61]

A 2010 comScore survey showed similar results about consumers' growing desire for unbundled PAYDAYS UBI products, with 20% of respondents claiming to have heard of the term "pay-as-you-drive insurance" versus 17% in 2009. More significantly, of those who had heard of it, 31% said that they would definitely purchase it in 2010 versus only 17% in 2009. Also, while 18% of 2009 respondents who had heard of it said that they definitely would not purchase it, only 11% said that in 2010.[62]

Optimal Customer Profile and PAYDAYS UBI Product

Once PAYDAYS UBI programs become widely available, the human biases and foibles described above—especially the aversion to decision-making—suggest adoption may be somewhat slow, at least absent superb product design and marketing efforts. Nonetheless, behavioral economics can help guide selection of product design features to enhance UBI's attractiveness to the most promising segments of the insurers' customer base.

Tables at the end of this document profile the most receptive potential customers (Table 1), identify marketing features to appeal to such customers (Table 2), and specify product characteristics that would achieve the highest possible mileage reductions among these customers (Table 3).

[60] Minnesota Department of Transportation. 2004. "Market Assessment Survey Results: Mileage Based User Fee Demonstration Project." Prepared by Cambridge Systematics, Inc., with MarketLineResearch, St. Paul, June 2004.
[61] Ibid.
[62] comScore. 2010. "Online Auto Insurance Report." Reston, April 2010.

Table 1: Targeting the Most Receptive Potential PAYDAYS UBI Insurance Customers

Customer Attribute	Effect of Attribute on Mileage Reductions	Boosting Mileage Reductions Where Feasible
Low mileage	This would yield smaller mileage reductions than with higher-mileage drivers.	"Skimming" of profitable low-mileage drivers would in time force traditional time-based policy rates to rise and thereby expand the PAYDAYS insurance market beyond low-mileage drivers.
High premiums	Large reductions would result because of high per-mile savings.	
Low income	Because low-income drivers are the most price-sensitive, large driving reductions would result.	
Urban	The relatively higher number of transportation and home-delivery options would suggest large driving reductions.	Consider subsidizing customer transit passes to encourage transit use.
Environmentalists	Large driving reductions would be expected.	Reinforce environmental benefits of reduced driving in communications.
Current transit, vanpool, carpool and non-motorized commuters	Potential peak-period mileage reductions would be much lower than for current drive-alone commuters.	Work with Transportation Management Associations and service providers to co-market PAYDAYS insurance to both existing and potential alternative transportation customers.
Vehicle lessees	A positive effect on reductions was found in Minnesota, most likely because vehicle lessees are more accustomed than others to managing their mileage (Gourville, 2004).	Work with vehicle leasing entities to allow customer rebates, reflective of increased residual value, for vehicles returned from lease with lower than allowable mileage.
Owners of multiple vehicles driven infrequently, including car collectors and do-it-yourself mechanics	Pricing of low-mileage vehicles would result in less per-vehicle mileage reductions than pricing of higher mileage vehicles. Nevertheless, households with many vehicles tend to drive more than other households, even if mileage on individual vehicles may be low.	

Table 2: Marketing PAYDAYS UBI Products

Product or Marketing Attribute	Effect of Attribute on Mileage Reductions	Boosting Mileage Reductions Where Feasible
Default option (but with traditional time-based policy readily available)	Has the potential to boost participation substantially if company already has a large customer-base.	
Limited, free miles of PAYD UBI provided upfront with the purchase of a transit pass, car sharing membership, or commuter bicycle	Should be negligible as almost all drivers would need to purchase additional miles because the initial provision would be small.	
Simple pricing (but algorithm to determine a policyholder's price need not be)	Unknown.	
Savings	Customers who continue to focus on overall premium savings after switching to PAYD insurance would be less motivated to reduce mileage than those focusing on per-mile or per-minute costs.	After customers switch to PAYDAYS insurance, immediately refocus communications to emphasize cost per mile or minute. When marketing policy renewal, focus back onto total savings.
Control over total premiums	There should be some positive effect.	
Low premium payments with some timing discretion	Unknown.	
Cap maximum premium billed	While this may be critical to some to accept PAYD insurance, it reduces disincentives for high mileage.	Charges in excess of cap need not generally be forgiven but rather rolled over into subsequent bills until paid off.
Promise to compare after-the-fact costs with traditional premium	Unknown, but consumers are willing to take greater financial risks (e.g., accepting a new insurance product) if they know they will see a later cost comparison with the alternative not chosen (Gourville, 2002).	
Societal benefits (model after hybrid car marketing)	Some additional reductions among environmentalists and other socially conscious customers may occur.	

Table 3: Maximizing Mileage Reductions across Customers

Strategy	Effect on Customer Acceptance	Improving Customer Acceptance Where Feasible
Direct and transparent per-mile charges (no rebates or requirements to purchase miles in large use-or-lose bundles)	Customers would sometimes like to forget about their per-mile costs and might be reluctant to accept a PAYDAYS UBI product with these price-related attributes.	Avoid focusing on per-mile or per-minute charges until after customer has chosen PAYDAYS insurance. Refocus to total savings and away from per-mile pricing when seeking policy renewal.
Frequent billing emphasizing tangible (check or even cash) as opposed to less tangible (credit card) payment forms		
Reinforce pricing through e-mail reminders and taxi-like in-vehicle meters.		
Negotiate transit pass discounts and matching funds to buy down prices of alternative transportation modes.	Would be very popular, especially in urban and other areas with good transit options.	Engage in joint marketing campaigns with transit providers (e.g., "Wouldn't it be great if your insurance company helped pay for your transit trips? Now it might!")
Provide individualized assistance to customers to reduce driving by identifying alternative transportation, trip consolidation and trip elimination (e.g., through Internet shopping) options.	Would be positively construed generally and potentially very useful to some.	
Establish reasonable driving-reduction goals for participants and provide frequent-flyer-program-like status-related designations and rewards, and "regret lottery" rewards, contingent upon achieving such goals.	Would be positively construed because the only consequence of not achieving a program-established goal would be not receiving an extra reward. Customers who achieve a high status would be expected to be especially loyal.	

Proposed target customers who would benefit most from PAYDAYS UBI pricing include those with the following characteristics: low mileage (can save money right from the start); high premiums (can get substantial discounts with even modest driving reductions); low income (need to save money); urban (have many options to reduce driving); environmentalists (committed to reducing pollution); current transit, vanpool, carpool and non-motorized commuters; vehicle lessees; and owners of multiple vehicles driven infrequently, including car collectors and do-it-yourself mechanics.

A great marketing idea, aimed at likely receptive customers, would be to bundle 100 (irresistibly) free miles of insurance per month (or, for non-car owners, $10 worth of car-sharing or bicycle supplies/repairs per month) with a transit pass. Free miles of insurance could also be offered to those purchasing commuter bicycles and car-sharing memberships (replacing their second vehicle). Such short-lived bundling might encourage recipients of the small amount of already-paid-for PAYDAYS insurance to switch from traditional insurance to PAYDAYS UBI.

Regarding the product itself, PAYDAYS UBI pricing should, as reflected in Table 2, be the default option unless the consumer explicitly chooses standard pricing. Pricing should be clearly explained and simple, with a cap placed on the maximum billable premium, because many consumers will not choose such a product without a cap.[63] Marketing materials should highlight potential personal savings, control over premium size and payment terms, and environmental and other societal benefits.

To maximize mileage reductions, as outlined in Table 3, per-mile or per-minute-of-driving charges should be direct and transparent, and billing should be frequent, with interim pricing reminders sent through e-mail or conveyed via taxi-like meters in the consumer's car, such as have been deployed in the Washington state mileage-pricing pilot that tested pricing alternatives to a fuel tax.[64] Transportation alternatives should be made more appealing through negotiated price discounts for unlimited ride transit passes and by providing individualized assistance in identifying appropriate options.

A major product design issue is whether premium charges and related vehicle monitoring should be based only on miles or driving time, or whether other usage-based factors should be part of the reckoning: time of day of driving, driving style (aggressive vs. calm) and the relative safety of the types of roads driven. Research shows that tracking more factors and incorporating them into premiums improves actuarial accuracy. Rewarding calmer, presumably safer driving would further enhance safety and reduce fuel consumption.

[63] Bonsall, Peter, et al. 2004. "Road User Charging—Pricing Structures." Final Report for the Department for Transport on PPAD 99/159/002, University of Leeds, England, September 2004.
[64] Department of Commerce, State of Washington. 2013. "Washington State Energy Strategy." May 2013.

The main PAYDAYS UBI products' pricing is based, to a degree, on drivers' behavior observed via a telematics device. It has been noted that 90% of drivers view themselves as better than average, suggesting they would be amenable to products which base their rates partially on "how" they drive—e.g., avoiding hard braking and swerving—when compared to others, even if they are really no better than the average driver.[65] In fact, in surveys conducted as part of a pilot that involved the North Central Texas Council of Governments and Progressive Insurance where participants were paid for reducing their driving time and mileage, some said they would like having the quality of their driving monitored as part of determining their discounts because they believed they were better drivers than others even if they were not sure they could cut down their mileage[66]

Designing PAYDAYS Insurance Pilot Projects to Learn More

While it is possible to make theoretical projections of the success of different PAYDAYS UBI programs, in terms of accuracy, these cannot replace pilot studies. Unfortunately, federally funded pilot studies of transportation pricing have sometimes faced practical constraints that have not always enabled them to be ideally designed.

First, it is important to start with what not to do. The studies mentioned above all gave participants a "bank account," a specific sum from which deductions were made for each mile driven. Participants got to keep whatever cash was left in these accounts at the pilot's end. As noted earlier, people perceive such cash as a windfall that they value far less than their own hard-earned dollars, and they, therefore, put far less effort into preserving the windfall by curbing their driving than they would if required to pay outright for each mile driven.

A better design of a pilot program, assuming the commercial product cannot initially be offered in a test environment where before and after data can be collected, would entail providing a stipend up front, instead of the "bank account." Participants would be allowed to spend the stipend whenever and however they choose—conditioned upon signing a contract to complete the pilot which would entail direct per-mile pricing. Behavioral economics has shown once people take mental ownership of such a stipend, which they generally do after a bit of time elapses, but which they never got to do with the "bank accounts," they quickly come to see it as their own, rather than as a windfall. Thus, most participants would discount the importance of their initial stipend and consider money spent related to the pilot to be their own. Of course,

[65] Thaler, Richard H. and Sunstein, Cass R. 2008. "Nudge: Improving Decisions about Health, Wealth, and Happiness." Yale University Press, New Haven.
[66] North Central Texas Council of Governments. 2008. "Pay As You Drive (PAYD) Insurance Pilot Program: Phase 2 Final Report." Prepared by Progressive County Mutual Insurance Company and the North Central Texas Council of Governments.

this might lead some to try to abscond with the stipend without paying all of their incurred per-mile charges, but such risk is often part of high-reward research.

The pilot program should include sufficiently large numbers of urban, suburban and rural households to draw conclusions about responsiveness from each. Households with a range of incomes and insurance premiums should also be included, as should others with limited-mileage leased vehicles. Comprehensive surveys should be administered to participants in order to learn how their views about the need for environmental protection—especially related to driving—and openness to alternative transportation options affects their propensity to reduce their driving distance.

Surveys should also ask participants whether they prefer PAYDAYS UBI or traditional insurance pricing in order to determine how their insurance preferences influence their propensity to curb their driving under PAYDAYS UBI pricing. A good pilot program should include participants with both preferences; a generous stipend can motivate subjects to allow themselves to be assigned randomly to a PAYDAYS UBI group or a control group with a traditional insurance plan. Multiple billing protocols should be tested—perhaps including weekly, monthly, quarterly and semi-annual billing—as should pricing reminder protocols, including regular e-mails and in-vehicle taxi-like meters. Testing the effects of co-marketing transit pass subsidies with PAYDAYS insurance should also be considered. For projects designed to assess PAYDAYS UBI product demand, test groups should include permutations of PAYDAYS UBI that bundle transit passes as well as some free miles of car insurance as sweeteners. The opportunity to buy more miles of insurance should also be provided to test how effective a combined offer of some free miles of insurance with a simple system to purchase additional miles is in persuading drivers to accept PAYDAYS UBI premiums. Finally, some participants should be offered extensive hand holding in mapping out and determining their travel options to see how such information, in concert with the pricing signals, influences their mileage.

An inherent challenge in marketing any new product, no matter how thoughtfully designed, is that customers overvalue the features that they anticipate losing, and undervalue those that they anticipate gaining.[67] This was expressed in the Minnesota PAYDAYS lease focus groups.[68]

Inevitably, some consumers may refuse a PAYDAYS UBI product where payments vary with mileage. Nonetheless, given the interest in PAYDAYS UBI from insurance companies, governments, advocacy groups and consumers, along with the marketplace successes of other

[67] Schwartz, Barry. 2004. "The Paradox of Choice: Why More is Less." HarperCollins Publishers, Inc., New York.
[68] Minnesota Department of Transportation. 2004. "Market Assessment Survey Results: Mileage Based User Fee Demonstration Project." Prepared by Cambridge Systematics, Inc., with MarketLineResearch, St. Paul, June 2004.

PAYDAYS pricing products such as car-sharing, PAYDAYS UBI is very likely to succeed in the market.

Conclusion

The PAYDAYS UBI pricing strategy promises to benefit individuals, insurance companies and the country as a whole (as discussed in the section of the study dealing with benefits). Many individuals will be able to reduce their insurance premiums by driving less. The overall reduction in driving will cut CO 2 emissions, lessen traffic, improve public health through a reduction in car crashes, improve the nation's balance of payments and reduce the funds that go to hostile, oil-producing countries. All this is widely acknowledged. Moreover, the basic concept can be offered in many forms, each designed to appeal to a different segment of the market, raising the potential market penetration of this revolutionary concept. Insights from behavioral economics will continue to improve the design, marketing and pricing of PAYDAYS UBI products.

Insurer, Consumer and Societal Benefits of Telematics-Based UBI

Insurer, Consumer and Societal Benefits of Telematics-Based UBI

By NAIC Staff

Introduction

Telematics, particularly when paired with UBI, offers many potential benefits for insurers, consumers and society as a whole. Insurers benefit by being able to differentiate their product offerings, enhance pricing, lower claim costs, enhance brand awareness and create new revenue streams. For consumers, telematics-based UBI offers certain advantages over traditional insurance, including the ability to control premiums and receive ancillary benefits. Society as a whole accrues benefits from improved road safety, less road congestion and lower emissions resulting from drivers' focus on vehicle-usage and driving performance.

Insurer Benefits

As previously noted, telematics-based UBI programs benefit insurers most by enabling them to develop more accurate risk assessment and pricing practices. Insurers use collected driving behavior data to achieve a more granular predictor of risk, allowing underwriters to better segment drivers by their risk indicators. Underwriters can then offer premium rates, deductibles and coverage features appropriate for each segment.

Studies show applying variable pricing within existing classifications (such as age, annual mileage and territory) can be a much better pricing model than relying on indirect aggregated classification variables alone. This is because traditional classifications are based on indirect aggregated variables of past trends and events. However, insurers already using this data caution it is important to identify variables which enhance rather than duplicate existing model predictability. Doing so can provide insurers integrating telematics driving behavior data for risk-segmentation with a distinct competitive advantage over other insurers.

Telematics-supported UBI's focus on tying driver behavior to pricing also allows insurers to better control their risk exposure, potentially raising their risk tolerances and allowing them to reach new customer bases. The ability for insurers to charge drivers less for safer driving habits provides a powerful incentive to consumers to improve their driving behaviors in order to lower their premiums. This affords insurers using these programs several competitive advantages. First, insurers can identify their lowest-risk drivers, raising retention levels for preferred risks. Secondly, they are also likely to gain new customers by offering all drivers the opportunity to pay less for their car insurance. This could particularly help reach younger drivers who are generally riskier but more amenable to modifying their behavior in order to earn a discount.

The connected nature of telematics provides insurers with new policyholder communication channels. As illustrated in the insurance market section, insurers can leverage these new channels to increase their interaction with policyholders and build stronger relationships. Insurers also benefit from the potential reduction in loss costs derived from the incentive telematics-based UBI programs provide to modify driving behaviors. According to a study by the Brookings Institute, reducing miles driven correlates to fewer accidents and lower claims costs.[69] Thus, tying premium to miles driven encourages drivers to limit their vehicle use, lowering insurers' associated loss costs.

Additionally, insurers' claims management practices can be enhanced through telematics. More sophisticated telematics programs seamlessly transmit driving data between the insured's vehicle system and the insurer's application platform, increasing the speed and efficiency of claims processing. By analyzing real-time driving data (such as hard breaking, speed and time) during an accident, insurers can more accurately estimating accident damages and reduce fraud and claims disputes. As detailed in the market section of this study, ancillary safety benefits, offered in conjunction with many telematics-based UBI programs, also help insurers to lower accident and vehicle theft related costs by improving accident response time, allowing for stolen vehicles to be tracked and recovered, and monitoring driver safety.

Some studies predict insurers will receive more than 25 percent of their premium revenue, representing $30 billion, from telematics-based insurance programs by 2020.[70] Early adopters would most likely have a competitive advantage due to the rich driving behavior data they have collected for pricing analysis. The proprietary nature of the collected data available to the insurer would make it exceedingly difficult for its competitors who do not have historical driving data to appropriately price their products.

Consumer Benefits

Telematics-based UBI programs offer several potential consumer advantages. As exemplified throughout the study, consumers benefit most by having the ability to reduce their auto insurance costs. Premium reductions can come from insurer participation discounts, improved driving performance or voluntary reductions in mileage driven. Consumers are commonly told they can expect 20-50 percent reductions on their insurance premiums under a telematics-based UBI program.[71] Some insurers offer smaller program participation discounts to encourage drivers to switch to a UBI plan.

[69] Jason E. Bordoff and Pascal J. Noel. 2008. "Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity," The Brookings Institution.
[70] SAS Institute Inc., (n.d.). "Telematics: How big data is transforming the auto insurance industry."
[71] Williams, G. (2014, January 13). "Should you try pay-as-you-drive insurance?" *US News and World Report.*

Telematics-based insurance programs are still evolving in the market. However, consumer surveys indicate premium discounts and the ability to control premiums are the primary drivers for consumer adoption of telematics-based UBI programs. According to the 2014 Annual LexisNexis Insurance Telematics study, 78 percent of respondents cited discounts as an incentive to adopt telematics insurance programs.[72] Seventy-four percent cited the ability to control their auto insurance costs as an incentive. This study, which focused on consumers and small fleet managers, found consumer awareness of UBI has plateaued, but demand among those who are aware continues to increase.

Consumers' attraction to these programs also lies in part from the empowerment to control premium costs with variables, which have a common sense link to pricing. Telematics UBI programs are designed to convert the fixed costs, or part of the fixed costs, associated with mileage driven into variable costs, which can then be integrated into existing class and risk categories for premium calculation. This provides consumers with a more transparent and direct link between driving behavior and usage and policy pricing. It also provides for more flexible pricing by allowing consumers to achieve more affordable premiums when needed by reducing the miles they drive or improving driving performance. This can be particularly beneficial to lower-income, urban and multi-car households.

This pricing scheme also eliminates the cross-subsidy between higher risk and lower risk drivers, benefiting the majority of consumers. According to a study done by the Brookings Institute, 63.5 percent of households with insured vehicles would save an average of $496 a year (a 28 percent average reduction in premium) under a fully variable mileage-based UBI program.[73] This savings is primarily from eliminating the subsidy for high mileage drivers, who account for the majority of miles driven within each risk class, but pay a disproportionately lower premium. Eliminating this cross subsidy increases affordability for lower-mileage drivers, many of whom are also lower-income drivers. Those who do not initially save still benefit by having the ability to shrink premiums by changing their driving habits.

Telematics-based UBI programs also benefit consumers by incentivizing them to increase their safety through better driving habits. Safer drivers become even safer and riskier drivers, whose premiums are typically highest, are educated to modify their high risk behavior. This focus on educating and promoting safety can be particularly appealing to households with young divers. According to the 2014 LexisNexis study, young driver programs were cited as one of the most popular value-added features among consumers, with 56 percent of respondents with children

[72] Lukens, D. 2014. "Usage-Based Insurance (UBI) Research Results for Consumer and Small Fleet Markets." LexisNexis.

[73] Jason E. Bordoff and Pascal J. Noel. 2008. "Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity," The Brookings Institution.

on their policy indicating interest in telematics programs which track and provide feedback on their teens.[74] Parents enjoy the benefit of remaining informed on their young driver's performance behind the wheel of a car. Young drivers have the benefit of receiving educational coaching on riskier driving behaviors, such as rapid acceleration, speeding and sharp turns, tracked through telematics devices.

Like insurers, consumers accrue the benefits of safer driving and reduced usage in lower costs associated with accident frequency and severity. The use of telematics data, such as breaking, vehicle impact and speeding, to assess fault in accidents provides consumers with more efficient claims settlement. Telematics devices also facilitate more continuous communication between drivers and insurers, providing consumers with greater personalized communication. This continuous connection allows consumers to receive value-added benefits, such as faster emergency response time, road-side assistance, stolen vehicle recovery, and fuel efficiency and vehicle maintenance support. These types of value-added services are gaining in popularity and becoming important benefit features for consumers. Interestingly, the 2014 Annual LexisNexis study found bundling value-added services to discounts beyond ten percent was as effective as higher discounts alone.[75]

Societal Benefits

Many of same benefits consumers reap under telematics-based UBI programs provide significant societal benefits as well. Insurance programs linking premium to mileage provide a powerful incentive for consumers to reduce the miles they drive. Fewer miles driven mean fewer cars on the road, less road congestion, lower infrastructure costs, and lower overall fuel consumption and vehicle emissions. Additionally, insurers' use of telematics data to assess driving behaviors and encourage safer driving habits result in fewer accidents, creating safer roads for all citizens.

According to a study done by the Brookings Institute, tying insurance costs directly to miles driven would result in an approximate 8 percent reduction in vehicle miles traveled. The study, which focused on examining data from states with UBI programs, found policyholders were willing to seek out alternative transportation options or forego less valued travel altogether to lower their premiums. Researchers then extrapolated the findings to a national level and found this 8 percent reduction in vehicle miles traveled would result in annual net social benefits of $50 billion to $60 billion, related mainly to reduced accidents and road congestion. (See the section on FHWA UBI funding initiatives for more.) The study also found fewer VMT would

[74] Lukens, D. 2014. "Usage-Based Insurance (UBI) Research Results for Consumer and Small Fleet Markets." *LexisNexis.*
[75] Ibid.

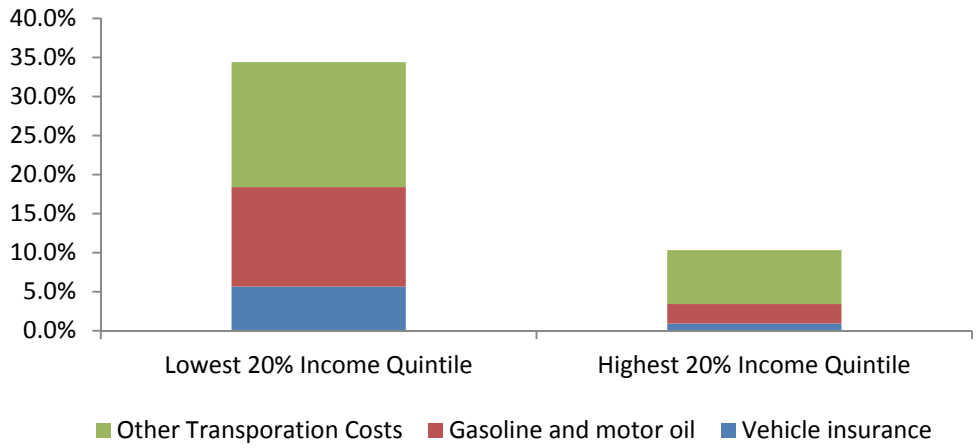
proportionally reduce fuel consumption, but have a greater reduction on carbon emissions when the total refining process is considered. Accordingly, reducing VMT would result in a proportional 8 percent reduction in gasoline consumption, lowering carbon emissions by 126 tons, or 2 percent of the U.S. carbon emissions in 2006. This reduction in fuel consumption would reduce U.S. oil consumption by about 4 percent and potentially help to support U.S. national security policies.

UBI programs also have the potential to increase the number of insured drivers on the road by creating more affordable auto insurance options. Pricing insurance on usage allows consumers to adjust the mileage they drive to fit the amount of auto insurance premium they can afford. This has important implications for lower-income drivers, who may not be able to purchase auto insurance otherwise. The Insurance Research Council (IRC) estimates 29.7 million people, or 12.6 percent of drivers, nationwide were uninsured in 2012. In states with a higher proportion of lower-income drivers, the uninsured motorist rate shoots up to as much as 26 percent.[76] The Brookings Institute study found the average household making less than $52,500 a year save when using an insurance program where premiums are based on miles driven.[77] This savings has a much bigger impact on lower-income households, who spend up to four times more of their income on insurance and other transportation costs than higher-income households.[78] According to the 2013 U.S. Bureau of Labor and Statistics (BLS) Consumer Expenditures Survey, households in the lowest twentieth percent income quintile spent 5.7 percent of their income on vehicle insurance. In contrast, the highest twentieth percent income quintile spent just 0.9 percent of their income on vehicle insurance.

Lower auto insurance premiums and fuel consumption also help lower total transportation costs. As illustrated below, total transportation costs represented 34.4 percent of income for the lowest 20 percent income quintile in 2013. This compares to just 10.4 percent of income for the highest percent income quintile. Similarly, vehicle insurance and gas and motor oil represented 53.4 percent of total transportation costs for the lowest income quintile in 2013. This compares to just 33 percent of total transportation costs for the highest income quintile.

[76] Corum, D. (2014, August 5). “New Study Reveals a Declining Trend in the Percentage of Uninsured Motorists.” *Insurance Research Council*.
[77] Jason E. Bordoff and Pascal J. Noel (2008), “Pay-As-You-Drive Auto Insurance: A Simple Way to Reduce Driving-Related Harms and Increase Equity,” The Brookings Institution.
[78] Moving Cooler Steering Committee., Cambridge Systematics., & Urban Land Institute. (2009). “Moving Cooler: An Analysis of Transportation Strategies for R*educing* Greenhouse Gas Emissions.” Washington, DC: Urban Land Institute.

Figure 1: Transportation Costs by Income
Source: U.S. Bureau of Labor Statistics Consumer Expenditures Survey



Because pricing insurance on usage and actual driving behaviors eliminates the cross-subsidy between lower-mileage and higher-mileage drivers, it is also more socially equitable. Depending on a state's regulations, insurers may use additional non-driving rating factors in their auto insurance pricing models. Common non-driving factors include marital status, occupation, educational attainment, credit score and homeownership.[79] Although these factors are statistically valid predictors of risk, they have the potential to penalize young drivers, the poor, senior citizens, urban residents and non-homeowners with higher rates. This issue was illustrated in a recent Consumer Federation of America (CFA) study. The study found a Baltimore driver would pay 46% less in premium for minimum liability coverage under one insurer's rating structure if he or she were a married homeowner in a higher-income ZIP Code.[80] This study also found auto premiums exceeded $500 annually in 24 out of 50 of the nation's largest urban areas. Because urban drivers usually drive fewer miles, they would likely pay less in auto insurance premium under an insurance program which based premiums on miles driven.

The potential for telematics PAYD UBI programs to deliver societal benefits is predicated on each program's ability to change consumer behavior. To affect consumer behavior, the link between behavior and pricing must be clearly understandable by consumers. However, the mix of factors used in complex algorithms to derive a driving score can complicate consumers' ability to identify which behaviors affect pricing the most.[81] Consider the drivers whose driving pattern includes too many hard breaks, but they do not know how many fewer breaks he they

[79] Rust, A. (2014, March 11). "Is Usage-Based Insurance a Better Deal for the Poor?" [Web log message]. Retrieved from *http://banktalk.org/content/auto-insurance-pricing-bias-against-poor*.
[80] Toups, D. (2012, September 24). "Drivers to Insurers: Watch Our Driving, Not Our Wallets." *CarInsurance.com*.
[81] Sachdev, A. (2011, September 16). "Your Car Knows Everything." *Chicago Tribune*.

need to lower their premium. Additionally, the proprietary nature of these models and the driving data they rely on can make it more difficult for consumers to move their business to a new insurer and continue to reap the benefits of their improved driving. For these reasons, consumers and society will benefit most from more transparent programs.

Consumer Concerns and the Promise of UBI

Consumer Concerns and the Promise of UBI

By Birny Birnbaum,* Executive Director, Center for Economic Justice

Introduction

Telematics-based UBI has the power to transform both auto insurance and auto safety. UBI has long been promoted by consumer advocates as a way to improve auto insurance pricing and to better empower consumers to modify their behavior to reduce accidents and lower auto insurance premiums.

Policy Goals

Consumers see two overriding public policy goals for insurance. First is ensuring that all consumers have access to essential insurance products. Insurance products are essential financial security tools for individual and community economic development and asset preservation. Low-income consumers, who need these products even more than more affluent consumers, must have access to these key products.

Second, insurance is the core institution for loss reduction and risk mitigation. Through the risk classification system, insurance has shown it can promote the reduction of loss of life and property by giving economic feedback to consumers through incentives for less risky behavior and disincentives for more risky behavior.

The insurance system is uniquely positioned to accomplish these goals. Consumer advocates have long pushed for pay-by-the-mile auto insurance, an early form of UBI, as a fairer way of pricing insurance by focusing rating factors on things that a consumer has some control over and, consequently, have the potential to change consumer behavior.

Bright Future for Consumers?

We see a future for telematics UBI that provides real-time feedback to consumers regarding risky driving and, in exchange for sharing the data with insurers, a future of auto insurance premiums based predominantly on miles driven and driving behavior while reducing or eliminating the use of the plethora of currently-used socio-economic rating factors like education, occupation, prior insurance, prior insurance limits, credit scoring, and other proxies for race and income.

* NAIC funded consumer liaison representative.

Unfortunately, the development of UBI and telematics has taken a wrong turn. Instead of using telematics to create transparency in auto insurance pricing and create new opportunities for loss mitigation, insurers have turned telematics into just another black box rating factor, like credit scoring but without even the limited protections afforded consumers for insurers' use of consumer credit information. Our concerns about the current state of telematics include:

- Privacy issues and use and distribution of data by insurers for purposes other than loss mitigation and pricing, including, for example, insurers using information from telematics in claim settlements when helpful to insurers but not making the data available to consumers when helpful to consumers.

- Disproportionate impact of offer and sale of UBI against consumers in low- and moderate-income and minority communities.

- Failure to achieve meaningful loss mitigation because of a black box approach by insurers of collecting data for rating.

- Use of telematics data as merely another data mining exercise following on insurer use of credit information—including penalizing consumers not because of driving behavior but because of where and when they drive as a function of work and housing segregation.

- Limited regulatory oversight to date.

Pushing Ahead

Industry representatives caution regulators not to do anything to impede insurers' ability to innovate with telematics; that is code for do not regulate. Consumer advocates have seen the results of innovation in the past—massive abuses in credit scoring in the 1990s early 2000s; counting inquiries as a claim in Comprehensive Loss Underwriting Exchange (CLUE) databases in the 2000s; and price optimization or price gouging under the banner of management pricing discretion in the 2010s.

The problem with unfettered "innovation" is that interests of insurers do not align with those of consumers. If the insurer and consumer interests did align, we would see telematics UBI programs featuring transparency and explicit protection of consumer privacy and consumer-generated driving data. Instead, insurers compete on the basis of risk classifications, slicing and dicing the population, and keep these methods secret. By using telematics in this manner, the

insurers defeat the key function of risk classification: to provide incentives for less risky behavior and disincentives for more risky behavior.

A Failed Promise?

From a consumer and public policy perspective, the development of telematics has been a market failure. Insurance regulators can and should address this market failure by providing a regulatory structure for telematics programs which would not only ensure transparency and fairness to consumers, but which promote greater confidence by consumers that their data would not be used against them. Consequently, consumer use and acceptance of UBI would grow more quickly and result in more loss reduction and greater fairness in insurance pricing. The regulatory framework should include:

- Establish data ownership and privacy standards.
- Establish standards for permitted and prohibited uses of consumer data.
- Collect and analyze granular data on offers and sales of UBI based related to prohibited risk classification factors, including race and income.
- Require insurers to include variables for race and income in generalized linear models.
- Establish standards for disclosure of telematics results and rating programs to ensure consumer receive feedback necessary to alter behavior.
- Replicate analyses presented by insurers in summary form—require insurers to produce all analyses—not just loss ratio as outcome variable, but other analyses using other outcome variables.
- Stop this fiction of discounts only unless and until the rating factor can be associated with lower overall claims and not simply a redistribution of income.

Regulation and competition are not inconsistent. We believe one of the impediments to greater use of telematics is consumer concern over privacy and the lack of transparency on the uses of the data. Regulatory efforts to establish data ownership, privacy and permitted/prohibited data use standards would increase consumer confidence and grow the market.

Regulatory Implications of Telematics UBI

Regulatory Implications of Telematics UBI

By Sandra Castagna, Associate Commissioner, Maryland Insurance Administration (Retired)

Introduction

Insurance companies underwrite and price risks, and pay claims based on data. By making telematics-based UBI programs available, insurers will gather more data than ever regarding the driving behavior and habits of policyholders. The implementation of these programs and the collection, analysis and use of the data present regulatory concerns and provide an opportunity to propose action to address them.

Data Collection

When first introduced to regulators, telematics-based UBI seemed simple enough: As it has been detailed in the technology and market sections of the study, a device is provided to the policyholder to plug into a port in the vehicle, and after a set period of time established by the insurer, the device is removed. Then, based on mileage information transmitted, a premium discount is applied to the policy by the insurer. These PAYD discounts can range from as low as one percent (just for participating) to a maximum of 30% (very few miles driven). There was little concern as to the real accuracy of the data collected by the device or to the application of the discount. The number of miles driven was technically verifiable and the less time spent on the road, the less risk an insured presented. This arrangement appeared straightforward, was understood by consumers, and any discount to the policy premium was easily computed.

Fast forward to the myriad technological methods now available to collect data related to driving behavior as has been discussed in the technology section. Currently, as regulators have seen, the devices capture much more information, including not only the number of miles driven, but also when, where and how they are driven. Furthermore, once captured, data can be reported in different formats. As a result, telematics-based UBI programs are no longer as simple and straightforward as they used to be.

Technology Concerns

A threshold concern for regulators reviewing filings containing telematics UBI programs is the method used by insurers to record, transmit, receive and report driving data. It is less likely the insurance company is collecting data directly and more likely it has entered into an agreement with one or more third parties. If raw driving data is transmitted to a vendor, how is the information processed before being forwarded to the insurer? Does the vendor scrub the data for accuracy? How will it be formatted, stored and protected from misuse by internal and

external actors? To fully understand and review a filing that contains telematics rules and discounts, the method(s) employed to capture the driving behavior requires disclosure to and understanding by regulators.

Another concern arises when different equipment is provided to insureds based on the make and model of the vehicle being driven. In certain instances, the devices may not record the same data or record the data in the same manner. No matter what arrangement an insurance company enters into for the collection and measurement of driving data, regulators should confirm the same data is obtained for every program participant and all potential discounts are made available to all participants who meet the established criteria.

The frequency and duration of data transmission to the recipient must be taken into account. Telematics devices or apps may record and transmit data every 30 seconds or less when the vehicle is in motion; therefore, a great deal of information is captured per day, week, and month or policy term. Some insurers' telematics UBI programs are structured to collect data continuously throughout the policy term, while others may limit collection to a specific period of time, such as 30 or 60 days. One insurer's experience may support the adequacy of 30 days' driving data to determine the risk an insured presents; however, another may determine only continuous monitoring throughout the policy term produces credible results. If data is to be captured for shorter periods, complete and consistent measurement is imperative.

The Need for Transparency

When credit history, occupation and education were introduced as rating factors for automobile insurance, their use was questioned, studied and, in some states, limited or prohibited. A lack of transparency and the failure to explain how and why socio-economic factors were predictive of loss, as well as concerns that their use may be unfairly discriminatory, were reasons cited by regulators and legislators for the increased level of scrutiny. The use of telematics in automobile insurance rating seemingly does not garner similar attention because driving factors are being measured, and driving behavior is considered fundamentally to be an accurate predictor of risk.

While data privacy concerns for some may outweigh the economic benefits to be gained by participating in a UBI program, for many consumers, providing access to some personal driving information in exchange for the opportunity to reduce insurance premiums makes perfect sense. If simply told "good driving behavior" will result in a premium reduction, just what constitutes good driving behavior becomes the question. If an insured is not privy to detailed information regarding the factors being measured and their relationship to the receipt of a discount, it is less likely that changes in driving behavior will result or premium reductions will

be achieved. Telematics then becomes another inaccessible black box understood by few and trusted by even fewer.

By making information related to data collection, use, ownership, storage, protection and dissemination available to regulators and policyholders, insurers could demystify their telematics programs. This information may be disclosed to regulators in the filing and to insureds via a UBI participation agreement. Insurer best practices and participation agreements should include instructions that clearly identify each driving factor being measured, why it is being measured and why making more right turns than left is safer, or why driving at certain times of the day presents a greater risk than driving at others. By entering into the agreement, the insured accepts its terms and acknowledges that the insurer or its vendor will obtain and use specific driving-related information.

Access to mobile applications on smartphones or websites that track driving history and identify improvements insureds can make in order to reduce premiums also serves to make UBI programs more transparent. Any other terms related to the data's use—such as information sharing with third parties for marketing purposes, claims management or disclosure to government officials—should be stated clearly in the agreement.

Although it may seem unrelated to the review of rates and rules, information about data collection, use, ownership, storage, protection and dissemination should be made available to regulators when a filing incorporates telematics-based UBI. To determine if insurers have charged and collected premium in accordance with the applicable rate filings during market conduct examinations and consumer complaint investigations, regulators generally require support for discounts applied to the policy. One-page reports generated by third-party vendors at specific points in time throughout the policy term may or may not be sufficient to support the application or removal of a UBI discount. Questions pertaining to assumptions made by insurers regarding the storage, ownership and protection of the underlying data are appropriately asked during the filing review process to avoid compliance issues at a later date. Such questions include: Can data be retrieved easily when required? Is it being secured safely in a protected environment? Will it be retained in accordance with record retention regulations?

Rating Considerations

The challenge for regulators is to understand how recorded driving information is predictive of loss and reflected in the insurer's rates. Regulators must ensure that insurers do not consider any factors prohibited by statute or that result in rates that are inadequate, excessive or unfairly discriminatory.

One may feel driving within the speed limit, limiting the number of hard stops and rapid accelerations, and making fewer left turns than right turns are all positives. It would be expected any reduction in the frequency and severity of claims resulting from the use of telematics will result in lower premiums for policyholders. When rates for auto insurance are based on loss costs for broad risk classes and an individual insured's driving record (accidents and violations), they are verifiable and understandable. But, when modeled data suggest people who drive in certain areas (urban) at certain times of the day (1 a.m. – 5 a.m.) present more risk than others and the developed rates reflect that, are those rates actuarially sound? If the insurer's rating plan also contains factors for education, occupation and credit scoring, will low-skilled employees who work evening shifts at offices or hospitals located in urban areas present the greatest risk and pay the higher rates, or is this an example of unfair discrimination in rating?

Insurers and/or their third-party vendors developed generalized linear models (GLMs)[83] to quantify characteristics most predictive of safe operation of a vehicle and least likely to result in a loss. These rating models or algorithms may be defined as supplementary rate information, subject to filing requirements under the rating laws of the state. Insurers may object to filing the models, asserting they represent confidential commercial information, are trade secrets or proprietary in nature and should not be made available for public inspection. However, absent a review of the models, it is difficult to determine if any rates based upon them are compliant. What assumptions were made regarding the driving factors being measured? When considering the number of left versus right turns, the speed at which the turns are made, the number of hard braking events and rapid accelerations, the time of day, miles driven, location driven and the length of time the vehicle is driven at a speed in excess of a certain number of miles per hour, e.g. 70 mph, what combination of values presents the least likelihood of loss and will result in the greatest premium discount?

As we have seen, telematics-based UBI programs enable tremendous amounts of data to be collected and analyzed by insurers. By slicing and dicing data, insurers would be able to identify and develop more granular risk classes. This would result in more complex models, nuanced rating plans and individualized rates for personal automobile insurance. While it is incumbent upon regulators to review the data and the rating plans rigorously for compliance with the insurance laws, this is easier said than done in a file-and-use or use-and-file regulatory environment.

[83] A GLM is a generalization of the basic statistical linear model to allow for a non-normal and continuous (can take any value in a range) distribution of the dependent (or response) variable.

Availability and Affordability

The availability and affordability of automobile insurance have been studied and debated for many years and in many contexts. Numerous reports have been issued by various insurance industry groups, consumer groups, insurance departments and the NAIC. Currently, the NAIC Auto Insurance (C/D) Study Group, a joint working group of the Property and Casualty Insurance (C) Committee and the Market Regulation and Consumer Affairs (D) Committee, is studying the affordability of automobile insurance as it relates to low-income insureds. Recently, the Federal Insurance Office (FIO) requested comments on the same subject. A definition of affordable, the impact of high rates on the number of uninsured motorists, and whether the inclusion of rating factors for education, occupation and credit history produces rates that are unfairly discriminatory continue to be topics of ongoing discussion.

The insurance industry maintains that telematics-based UBI programs are another way of making automobile insurance more affordable. Discounts related to driving behavior are made available, insurance premiums are reduced by demonstrating safe driving behavior and, therefore, coverage becomes more affordable. Thus, insureds who stand to benefit most from the implementation of telematics programs include those who pay higher than average premiums or pay higher premiums relative to income, including residents of high-risk territories, inexperienced operators and low-income individuals. Insurers assert that by maintaining competitive markets and providing policyholders with increased options, premium savings will automatically ensue.

There is some merit to this proposition. If what was previously $X is now $0.7X, the policy is less expensive for that insured. However, concerns related to cross subsidization and the use of certain rating factors remain valid. If insurance rates are higher at the outset for certain classes due to the use of alleged unfairly discriminatory factors unrelated to driving history, the application of a discount for some based on driving behavior masks the underlying issue. While premium discounts are welcomed, they are not a substitute for the establishment of appropriate classifications of risk and actuarially sound rates for those risk classifications.

Claims Management

As it was noted in the section discussing benefits, a major benefit insurers cite for the increased use of telematics in automobile insurance is a reduction in the frequency and severity of claims. One theory suggests people modify their behavior when they are being observed. Therefore, when driving behavior is recorded, people will tend to drive more attentively and conservatively. More attentive and conservative driving will usually result in fewer accidents. A vehicle's whereabouts are known when the telematics technology is GPS-enabled, so a reduction in theft and fraud claims also has been noted by insurers. By combining driving

information with mapping technology, insurers have additional evidence to consider when investigating claims. If, when and where an incident occurred may be corroborated or disputed by data received through the use of telematics.

Generally, denying a claim for an arbitrary or capricious reason based on all available information and misrepresenting a pertinent fact that relates to the claim at issue are violations of state unfair claims settlement practices acts. When information obtained through telematics exists, failure to consider it consistently may invite administrative action. Insurers should establish protocols to ensure consistency and uniformity with respect to telematics driving data usage in claims investigations. The information may support denials, but it also can aid in acceptance of claims, as appropriate.

Next Steps

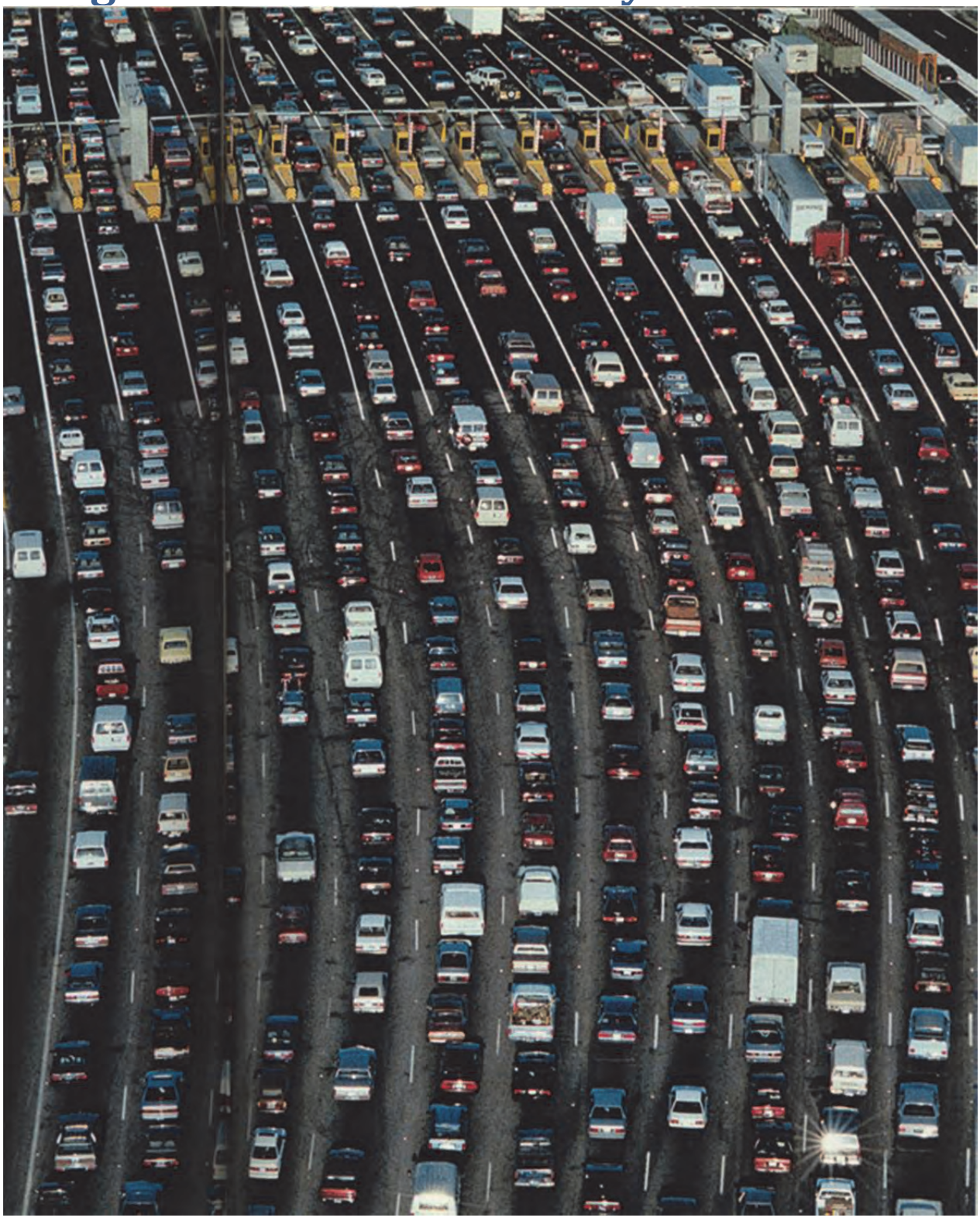
The challenges presented here are neither inconsequential, nor insurmountable; however, they do warrant attention. Vast amounts of information are collected, stored, analyzed and incorporated into rating plans by or on behalf of insurers. Currently, regulators must determine if the rating plans comply with rating laws, if premiums charged are in accordance with those filed plans and if appropriate disclosure and notice requirements have been met.

Regulators reluctantly acknowledge technological innovation will continue to affect rate development. Telematics began with PAYD and evolved into PHYD. Devices record data as the vehicle is being driven and presume the operator is the rated driver for the vehicle. However, with multiple operators and mobile technology, the driving behavior cannot always be linked to the actual operator. Insurers and rating organizations already overlay multiple models, including topography, GPS, crime, traffic and population density. When combined with driving behavior information, this could contain prohibited factors or produce rates that are unfairly discriminatory. If garaging location is replaced by factors related to the areas or zones where the vehicles are customarily driven and parked, could the new classifications discourage insureds from engaging in activities (e.g., working, shopping or visiting) in those zones if higher rates result?

If participation in the telematics UBI program requires policyholders to allow an insurer or its vendors to sell data to business partners, has the insurer engaged in unfair discrimination between insureds in “the other benefits payable on the insurance or in any of the other terms or conditions of insurance” if insureds in certain geographic areas receive discounts, coupons or other promotions, and others do not?

At a minimum, when the word “telematics” appears in a rate filing, regulators must ask questions.

FHWA UBI Funding Initiatives Promote Congestion Relief and Safety



FHWA UBI Funding Initiatives Promote Congestion Relief and Safety

By Allen Greenberg, Federal Highway Administration

Introduction

As documented elsewhere in this study, and also in the October 2013 CIPR Newsletter article, "Pay-as-you-drive-and-you-save (PAYDAYS) Insurance: Potential Benefits and Issues," there are numerous public policy benefits to telematics-supported PAYDAYS UBI—related to reducing congestion, curtailing vehicle emissions and enhancing roadway safety—that have inspired some federal and state government public policy measures to promote it.[84] These benefits of pricing insurance based on claims' risk associated with actual driving data come from voluntary actions taken by drivers in exchange for lower premiums. Obviously, insurance companies would only offer drivers such savings if they expect it would result in the company saving even more money due to reduced crash-caused claims. Motorists, of course, will only reduce their driving when the savings offered by UBI pricing exceeds the value of particular drive-alone trips to them.

While this section of the study is focused on federal PAYDAYS insurance related activities and investments, and especially those taken within the last 18 months, it is noteworthy that 13 states have included PAYDAYS insurance in at least some capacity within their climate action plans designed to reduce greenhouse gas emissions statewide. Oregon, in particular, has made tax credits available to insurance companies offering PAYDAYS UBI if at least 70% of the premium varies by miles or minutes of driving.

Current Efforts

The FHWA is currently funding multiple efforts to demonstrate and bring about the benefits of PAYDAYS insurance through the development of a competitive marketplace for PAYDAYS UBI programs. The efforts include: 1) supporting one or more before-after studies of driver behavioral changes resulting from PAYDAYS insurance; 2) helping small and mid-sized insurance companies through an initiative designed to figure out the precise relationship to crash-caused insurance claims of the amount of driving (distance and time in motion), driving conditions (congestion, roadway type, weather and night versus day) and driver behaviors (operating "smoothness" and speed limit compliance), bolstering companies' actuarial know-how and enabling them to offer PAYDAYS insurance products; and 3) working with small businesses and insured drivers to collect, understand and repackage usage-based driving data to coach drivers

[84] Greenberg, Allen. 2013. "Pay-as-you-drive-and-you-save (PAYDAYS) Insurance: Potential Benefits and Issues." CIPR Newsletter, October 2013.

to improve safety (and to save money) and provide them with multiple PAYDAYS insurance price quotes, thereby encouraging purchases of PAYDAYS UBI products that reward driving reductions and safer driving. Together, these initiatives, each described below, are intended to lead to better drivers and reduced exposure through a continuous incentive to reduce their risk of a crash by tying their UBI premiums to such risk.

Before-After Driver Behavior Study

Regarding the first topic area, and as discussed in the October 2013 CIPR Newsletter article cited above, reduced driving levels due to PAYDAYS UBI are projected using observed results from previous before-after studies where consumers experienced a change in their per-mile cost of driving (but not related to insurance costs) and adjusted their driving habits in response. Because consumers sometimes perceive identical costs are originating from varying sources differently (e.g., mileage-related costs associated with gasoline purchases versus tire replacement due to wear), they may in turn respond to actual price changes that look pretty similar to other proposed price changes in different ways. Thus, a before-after study of a specific price change—in this case, PAYDAYS UBI—is much preferable to having to extrapolate expected results of new price changes from studies following other price changes.

On Nov. 19, 2014, the FHWA issued a competitive solicitation seeking proposals (by Jan. 16, 2015) for the remaining balance of Value Pricing Pilot Program (VPPP) funds (authorized under Section 1012(b) of Pub. L. 102-240, as amended by Section 1216(a), Pub. L. 105-178 and Section 1604(a), Pub. L. 109-594). As noted in the solicitation, value pricing encompasses a variety of strategies to manage congestion on highways, including tolling of highway facilities through congestion pricing, as well as other strategies not involving tolls, such as PAYDAYS insurance and parking pricing. The FHWA is primarily seeking non-toll congestion pricing proposals in order to address the legislative requirement that a minimum amount of VPPP funds be "set-aside for projects not involving highway tolls." Also according to the notice: "While the FHWA evaluation team will consider a range of non-toll pricing projects of any variety, the intent is to prioritize applications that test something that has not yet been tested in the United States, such as a before/after study of driver behavior impacted by [PAYDAYS insurance], where the insurance premium varies substantially and transparently by miles or minutes of driving; however this interest does not preclude submission of other applications that meet VPPP eligibility criteria."

This is not the first time the FHWA solicited for before-after PAYDAYS UBI studies. Previous attempts did not result in any studies that moved into implementation. The Nov. 19, 2014, solicitation seeks to facilitate public-private partnerships (PPPs) by offering to provide eligible applicants (state departments of transportation) interested in testing PAYDAYS insurance with

contacts at insurance companies that, also having responded to the solicitation, have informed the FHWA that they would like to participate. By helping to forge strong PPPs, the FHWA is seeking to overcome the kinds of relationship weakness that were significantly responsible for past failures.

Actuarial Study to Encourage PAYDAYS Insurance Premiums

The second topic area, bolstering actuarial knowledge to facilitate companies in pricing PAYDAYS UBI products, stemmed from many sessions and discussions at insurance conferences and meetings, including an event sponsored by the NAIC's CIPR, where this need has been highlighted. According to the related federal solicitation: "FHWA is strongly promoting creativity and innovation … and is interested in developing and identifying new, different and improved methods and techniques in the area of PAYDAYS car insurance actuarial analysis to inform and support the competitive insurance marketplace. … Cutting edge actuarial research, especially if the results were made public, could lead to broader market penetration of PAYDAYS insurance and greater consumer, economic and societal benefits."

The solicitation continued: "A key barrier companies face in offering PAYDAYS insurance is in figuring out how to price it in a way that is actuarially accurate. This is harder to do than commonly thought, since insurance companies typically do not have accurate information about their customers' driving mileages. A number of companies have tried, with some success, to get such data on their own, but even when these companies acquire some such data and use it to begin to figure out the PAYDAYS insurance pricing puzzle, companies rarely succeed at getting most of the data they would like, thereby limiting their related pricing acumen. Additionally, the data they obtain and analysis they perform are not disseminated throughout the industry.

"An additional barrier companies face in offering PAYDAYS insurance is that, while the resulting initial costs and reduced premium revenues may be fairly transparent, the claims' reduction benefits from customers who take advantage of the new opportunity to save money by reducing their risk exposure are likely much less well understood."

The solicitation concluded regardless of whatever firm or company was to be chosen to complete the work, "Federally supported actuarial research that produces publicly-available, high-quality results, where such results are shared with insurance companies, state insurance commissions, and consumer group, would likely facilitate companies to begin offering PAYDAYS insurance. Additionally, helping companies quantify the reduced loss costs resulting from offering PAYDAYS insurance could encourage an expansion of PAYDAYS insurance offerings."

The FHWA awarded funding to a partnership including the SmarTrek app creator, Metropia, Inc., an expert in mobile data collection and analysis, and Illinois State University, Department of Finance Insurance, and Law, which has substantial actuarial expertise. While currently in its early stages, the intent of the study is to gather data without cost from the SmarTrek app, discern likely crash events from the data, and financially reward those believed to have crashed for answering follow-up injury and insurance claims survey questions.

For surveys that are not completed, claims will be estimated based on what the data from the app indicates about crash severity (analyzed using expertise garnered by having previously used similar data to find claims fraud). Driver exposure factors—e.g., trip distances, time of day, weather, traffic, and hard braking and other indicators of aggressive or inattentive driving—will be compared against the claims data to enable the appropriate weighing of each relevant factor within the PAYDAYS premium structure.

Insurance Competitive Price Quotes

The market today for insurance products using telematics technologies and services has technology and data providers selling services and products directly to insurance companies, and the data is not in turn offered back to consumers in a format that would enable them to solicit competitive PAYDAYS prices as they are able to solicit competitive prices for traditionally structured car insurance products. The result is that the dominant insurance company products including usage-based elements offer rates informed by driver data, but such data generally remains in a black box to consumers who might otherwise want to share it with competitors to secure lower premiums. The public policy benefits of having consumers appreciate how their driving affects their rates (including the number of miles driven in congested conditions) and then being provided an opportunity to change behavior to save on premiums is lost because of how the market is developing. Therefore, there is a need to create a marketplace that would enable consumers to collect and share their own portable driving data linked to crash risk—including mileage, conditions (e.g., related to congestion, time of day and weather), and vehicle performance and handling (e.g., prevalence of hard braking)—which would enable multiple insurance carriers to offer competitive and comparable PAYDAYS rates.

The products available today in the marketplace offer premiums that either do not vary at all after having been adjusted once reflective of baseline driving data or are less variable than actuarially justified. In either case, if instead of individual insurance companies owning the data collected for PAYDAYS UBI pricing, the consumer would, this would propel the market to respond to consumers shopping their own data for better prices by offering PAYDAYS UBI premiums that are more variable and competitive.

In order to stimulate a competitive marketplace for PAYDAYS insurance, funds have been awarded under the U.S. Department of Transportation (DOT) Small Business Innovative Research (SBIR) Program to enlist small and mid-size businesses—including vendors of in-vehicle telematics equipment—to work with personal lines insurance companies and environmental and consumer groups to gather data from willing insurance customers to enable competitive PAYDAYS UBI pricing. Two teams led by two small businesses—Vehicle Sciences Data Corp. and Agnik, Inc.—were awarded SBIR funding to in turn solicit volunteer drivers and multiple insurance companies to gather the necessary data for participating drivers to be offered at least three competitive PAYDAYS insurance rate quotes.

Outcomes expected from Phase I of the SBIR awards include detailed concepts demonstrating the viability of consumer telematics products and systems from which at least three insurance companies agree to accept the data to offer competitive premiums. Phase II of the projects is expected to include demonstrations of working prototypes of in-vehicle telematics devices, linked to data integration and warehousing systems, that would gather and inform consumers of their driving data and enable consumers to share such data with insurance companies in exchange for competitive price quotes and guidance on reducing future crash risks and the premiums that link to them.

Conclusion

Insurance companies today have compelling reasons to use telematics for market segmentation, as companies failing to do so face fairly extreme adverse selection risk. Thus, companies are offering consumers some incentives to gain their cooperation (e.g., “PAYDAYS insurance lite” policies where some minor discounts are offered in exchange for drivers sharing telematics data). These firms, however, experience little market pressure to use the data to offer genuine PAYDAYS UBI premiums.

The benefits of having consumers appreciate how their driving affects their rates and then being provided an opportunity to change behavior to save on premiums may be lost if black box pricing becomes the norm. (Black box pricing refers to an insurance company gathering and applying usage-based data in premium setting primarily for improved market segmentation—to offer the most attractive rates to the lowest-risk drivers within any rate class—but without the consumer having any detailed knowledge as to how their usage characteristics affect their rates.) This concern is not just theoretical since the majority of the more than 2 million people who have signed up for telematics-enabled insurance products are not provided by their insurance carriers significant personalized guidance about reducing their crash exposure and earning premium savings as a result.

The three FHWA-funded initiatives discussed above—demonstrating the public policy benefits of PAYDAYS UBI, learning about its actuarial underpinnings and facilitating consumers in getting competitive PAYDAYS UBI price quotes—together will help facilitate bringing competitively priced PAYDAYS UBI products with highly-variable premiums into the marketplace.

Study Conclusion

Conclusion

By NAIC Staff

The mature and highly competitive U.S. auto insurance industry is undoubtedly undergoing a fundamental change aided by technological innovations, promising a more efficient pricing of risks and widespread benefits accruing to insurers, consumers and society in general. The telematics-supported UBI programs, offered by an increasing number of insurers, are eagerly embraced by consumers seeking discounts in return of improved driving behavior.

The many societal benefits that can result from the adoption of telematics UBI PAYD programs—such as less congestion, lower vehicle emissions and enhanced roadway safety—has moved the FHWA to engage in the funding of multiple efforts to demonstrate and help realize the benefits of UBI through the development of a competitive marketplace.

Insurance companies, employing a variety of technological platforms and tools, are able to capture multiple data points on vehicle usage and operational characteristics, as well as driver behavior, to better understand and adequately model risky behavior. Using causal risk factors, rather than simply correlated variables, allows insurers to calculate premiums that accurately reflect true risks and thus offer significant discounts to those policyholders who consent to operate their vehicles within prescribed risk-minimizing parameters. Insurers also benefit from the superior fraud detection telematics can provide. This allows them to significantly reduce accident- and vehicle theft-related costs, passing a percentage of the savings along to their policyholders.

Increasing consumer acceptance of telematics technology and insurer UBI products, as evidenced by a number of surveys, is critical for mainstreaming these programs and, thus, harnessing the full benefits they can offer. Consumers primarily benefit by having lower premiums, while they also can materialize gains from their improved driving behavior mainly in the form of reduced fuel and maintenance costs. However, before ripping the benefits, a number of concerns by consumers and insurance state regulators regarding the use of telematics-based UBI programs need to be overcome. Consumers are concerned about the realization of the promise of transparency in auto insurance pricing held by telematics and instead are worried telematics would turn to a system such as credit scoring but absent any of the protections afforded to consumers. Regulators are equally concerned about consumer privacy and data misuse, as well as transparency regarding what type of data is collected, how it is stored, who has access to it and how it is used in pricing. Telematics should not become another opaque black box understood by few and trusted by even fewer.

It is critical all information about data collection, use, ownership, storage, protection and dissemination is made available to state insurance regulators when a filing incorporates telematics-based UBI. Regulators need to understand how recorded driving information is predictive of loss and reflected in the insurer's rates to make sure that insurance companies do not consider any factors prohibited by statute or that result in rates that are inadequate, excessive or unfairly discriminatory.

In addition, issues such as affordability and availability are important to both consumers and regulators, especially as it relates to underrepresented and low-income consumers, who tend to operate older vehicles.

As the CIPR survey of state DOIs suggests, state regulators are keenly aware of the potential benefits, as well as the implications, of the new telematics technology as applied in UBI policies. State regulators are very active in providing an appropriate legal and regulatory environment for telematics UBI based on the specific needs of their respective states, in the interest of a dynamic, fair and competitive marketplace but first and foremost in the service of their policyholders.

APPENDIX
CIPR Telematics State DOI Survey

CIPR Telematics UBI State DOI Survey

By NAIC Staff

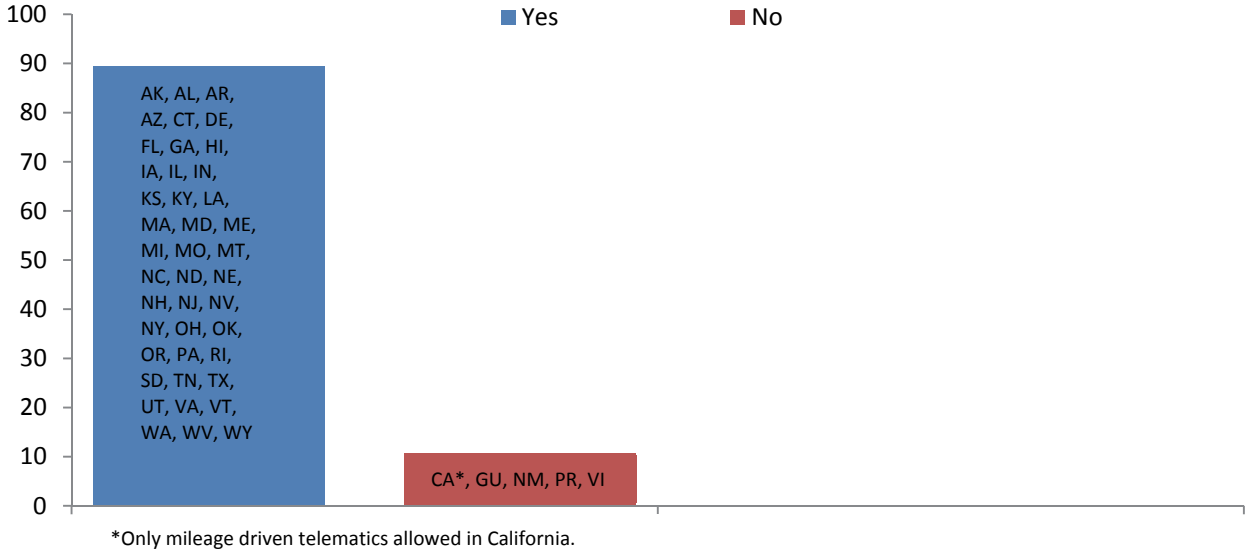
Introduction

In order to find out more about what actions states may have taken or contemplated related to the use of telematics UBI in auto insurance, CIPR developed a 10-question Web-based survey inviting in May of 2014 all U.S. jurisdictions to participate. The high response rate in the survey, with 47 jurisdictions providing answers, allowed for a comprehensive assessment of the growth of telematics and the readiness of the state regulatory system to ensure a viable, fair and dynamic auto insurance market.

Survey Results

Approximately 89 percent of the responders answered telematics-based UBI auto insurance is available in their states, closely reflecting recent market studies (Figure 1.) Eight of the jurisdictions noted they have 12 or more companies offering telematics UBI programs to their consumers. Another 15 states responded they have at least five but less than 12 domiciled insurers with a telematics UBI program. Ten states noted the number of companies offering telematics UBI programs in their jurisdiction were less than five. The remaining nine jurisdictions could not provide a precise number of companies active in telematics because legislation permitting such programs was only recently passed in their state and/or they do not have systems in place to accurately track how many companies offer telematics.

Figure 1: Telematics UBI Program State Availability
Source: CIPR



*Only mileage driven telematics allowed in California.

The follow-up to the first question was an open-ended inquiry seeking to explore the reasons a telematics program may not be available in a specific jurisdiction. Smaller jurisdictions—such as Guam, Puerto Rico and the Virgin Islands—noted the lack of interest by their domiciled insurers to make telematics-based UBI policies available in their local markets.

However, the California DOI pointed to the state's legal mandate to preserve drivers' privacy and control of their vehicles' data[85] and to the need for transparency and stability in premium rating factors behind the DOI's restrictive approach to telematics programs. At this point in time, only rating factors specified in statute or regulation are allowed in California and currently, none of the common telematics UBI PAYD behaviors, other than mileage, are among these factors. The only data telematics UBI programs available to California can use is mileage driven.

The third question in the survey asked state regulators to provide information of any specific legislation introduced relating to the usage of telematics and/or dealing with privacy concerns and rating issues. Six states responded affirmatively, noting the passage or introduction of unique legislation intended to establish a regulatory framework for telematics-based UBI.

During the 2006 legislative session, the legislature of the commonwealth of Virginia passed a bill addressing the use of recording devices in vehicles for the purpose of pricing auto insurance.[86] Two new statutes, §46.2-1088.6 and §38.2-2213.1, were introduced defining what a telematics is and how it can be used and specifying the pricing of a policy with or without telematics. In the event an insurer chooses to not allow access to his data to an insurer, the legislation prohibits retaliatory action by the insurer, such as reducing coverage, raising premium, applying surcharges and placing in a less favorable tier.

The legislature of the state of Washington in its 2012 session passed House Bill 2361 dealing with automobile UBI and exempting certain UBI information from public inspection. The legislation covers the usage of the data captured by a telematics device as defined in statute RCW 46.35.010 and the usage-based determination of rates or premiums. In addition, it ensures that all information about the UBI methods and/or processes of the insurer remains confidential.

[85] Existing California regulation restricts insurer use of a technological device for the collection of driving data, such as mileage.

[86] HB 816: Recording devices in motor vehicles; access to recorded data. Amending § 38.2-2212; adding §§ 38.2-2213.1, 46.2-1088.6, and 46.2-1532.2.* (Patron–May, CH 851). Commonwealth of Virginia.
SB 90: Recording devices in motor vehicles; agent cannot refuse to renew insurance if owner denies access. thereto. Amending § 38.2-2212; adding §§ 38.2-2213.1, 46.2-1088.6, and 46.2-1532.2.* (Patron–Watkins, CH 889). Commonwealth of Virginia.

The state of Illinois passed legislation in the 2011 session relating to trade secrets and commercial or financial information.[87] The 5 ILCS 140/7 statute provided protection to insurer proprietary trade secrets, allowing insurers to make their telematics solution available to consumers.

The General Assembly of the state of Delaware passed House Bill 56w/SA3 in the 2014 session enacted into law in May 2014.[88] The legislation prescribes certain regulations for telematics devices prohibiting the use by insurers of vehicle personal data for anything other than consideration for premium discounts. The law also requires disclosure to the insured of others who may gain access to their data, and otherwise prohibits insurance companies from releasing such data to others.[89]

The state of Montana noted its legislature will consider legislation in the 2015 session. The senate in North Carolina has passed SB 180, allowing enhancements to auto insurance, but it has not been enacted to date. Also, California pointed again the existence of legislation specifically restricting insurer use of a telematics device.

Eight jurisdictions (Arizona, Arkansas, Iowa, Kansas, Maine, Missouri, Nebraska and Texas) responded that their existing legal and regulatory framework adequately covers telematics UBI programs providing guidance on ratings and confidentiality protection for insurers' UBI solutions.

The fourth question inquired if the existing laws affect the development, availability and use of telematics-based UBI. Ten jurisdictions that had given a negative answer in the previous question responded their legal requirements may potentially hinder insurers' efforts to offer telematics solutions.

The state of Maryland pointed to the Insurance Article §11-307(a)[90], which requires all auto insurers to file with the Commissioner all rates and supplementary rating information for use in the state. The Maryland Insurance Administration is responsible for reviewing the rating criteria to ensure no insurer has rating criteria that would otherwise amount to a violation of the Insurance Article. The rating criteria and supporting documentation is subject to public disclosure pursuant to §11-307(c) of the Article.[91] According to the Maryland DOI, the public disclosure requirements for the telematics rating criteria have been a point of contention with some insurers. At the same time, there is no indication it has actually deterred any insurer from filing a telematics plan.

[87] 5 ILCS 140/7(1)(g), Illinois General Assembly.
[88] House Bill # 56 w/SA 3. State of Delaware 147th General Assembly.
[89] House Bill # 56 w/SA 3. State of Delaware 147th General Assembly.
[90] Maryland Insurance Article 11-307. General Assembly of Maryland.
[91] Ibid.

Similarly, the state of Iowa's Insurance Division noted complete rating information is required under Iowa Code §515F.5 on rate filings.[92] The state law requires all insurers to file their rates or rating plans, every manual, minimum premium, class rate, rating schedule and all relevant factors. Furthermore, all filings and supporting information should be open to public inspection.

The Office of Insurance Regulation of the state of Florida added that public disclosure requirements and review of all aspects of auto insurance rates are required in accordance with statute §627.0651.[93] The state of New York DOI referred to state Insurance Laws §2305[94] and §2307[95] on rates and ratings plans and policy forms, respectively. The laws require prior approval for all forms, rates and rating rules, and public disclosure of the filing and supporting information following approval. Also, New York's Freedom of Information Act means that no specific protection is guaranteed or afforded to any filed algorithms by insurers offering telematics UBI.

Hawaii revised statutes §431:10C-207 regarding discriminatory practices and §431:14-103(a)(1) dealing with the making of rates are the legal questions facing insurers offering telematics-based UBI, according to the Hawaii DOI.[96] Discriminatory practices are prohibited, so no insurer can base any standard or rating plan, directly or indirectly, on a person's driving experience, physical handicap and other factors like age, race, creed or ethnicity. Also, rates cannot be excessive, inadequate or unfairly discriminatory.

The state of Michigan's DOI pointed to a set of statutes in chapter 500 of the Insurance Code of 1956 that could affect the availability and use of telematics UBI in the state. Statute §500.2109 requires rates not be excessive, inadequate or unfairly discriminatory. Statute §500.2110a allows insurers to use factors for rating if universally applied, and statute §500.2111 lists factors such as miles driven, vehicle characteristics relating to automobile theft prevention devices and major driving hazards that can applied by an insurer only on a uniform basis throughout the state. Statute §500.2403 deals with the use of the rate that has or will have the effect of destroying competition among insurers, creating a monopoly or causing a kind of insurance to be unavailable to a significant number of applicants who are in good faith entitled to procure the insurance through ordinary methods.[97]

The Bureau of Insurance of the state of Maine noted the revised statute §2303 of Maine's Insurance Code that prescribes the establishment of classifications or modifications of classifications or risks based on such factors as individual experience is not prohibited provided

[92] Casualty Insurance Chapter 515. Iowa General Assembly.
[93] Chapter 627, s. 627.0651. Florida Legislature.
[94] Insurance Law §2305. New York Department of Financial Services.
[95] Insurance Law §2307. New York Department of Financial Services.
[96] Chapter 431 Insurance Code. Hawaii Department of Commerce and Consumer Affairs, Insurance Division.
[97] The Insurance Code of 1956, Chapter 500. The Michigan Legislature.

such classifications and modifications apply to all risks under the same or substantially similar circumstances or conditions. Also, revised statute §2304-A was referred regarding public disclosure of any filing and any other supporting information after the filing becomes effective.[98]

The Nevada DOI responded by noting the state is a prior approval state for all personal lines of insurance, meaning all UBI models have to be filed with the state and receive prior approval.

California DOI points to the state's Insurance Code 1861.02, where the mandatory rating factors are identified, and to the California Code of Regulations, Title 10, Chapter 5, Subchapter 4.7, Section 2632.5, where the allowable optional rating factors are listed. (None of the common PAYD factors are included.)[99] Section 2632.5 also specifies the use of a technological device is strictly limited for the purpose of collecting vehicle mileage information.[100]

The next open-ended question to state regulators asked how state DOIs monitor and supervise the ratemaking process for auto insurance, particularly in the presence of telematics UBI plans.

Almost all the jurisdictions have a requirement for filing of rates and rating systems. Rates also must be actuarially supported and not excessive, inadequate or unfairly discriminatory. Prior approval is a requirement shared by most jurisdictions. A number of jurisdictions have an exemption to prior approval requirement except when a flex rate method is used. However, telematics-based UBI programs generally cannot use the flex rate filing and must seek prior approval.

Guam responded by noting the existence of a tariff system for auto insurance in the territory. Any admitted insurer in the jurisdiction of Guam must file for any rate adjustment that deviates from the tariff.

The survey's sixth question inquired how states evaluate the level of competition in the presence of UBI programs in their jurisdictions.

The DOI of the commonwealth of Massachusetts in its response recognized UBI has the potential to create an uneven playing field in competitive markets due to the holding of telematics patents by insurers. However, it was noted that because annual mileage is already easily tracked in Massachusetts, the use of telematics-based UBI becomes less compelling as a competitive tool. The DOI reiterated rate filings are carefully reviewed to understand the type and extent of discounts offered in the market for UBI policies.

[98] Title 24-A: Maine Insurance Code. The Maine Legislature.
[99] State of California, Department of Insurance. Title 10, California Code of Regulations, Chapter 5, Subchapter 4.7, Section 2632.5. Pay-Drive (Usage Based Auto Insurance.)
[100] Ibid.

The Bureau of Insurance of Virginia emphasized it is purely consumers' decision to participate in a telematics plan, and there is no indication the presence of telematics in the state has had any adverse effects in Virginia's competitive insurance market.

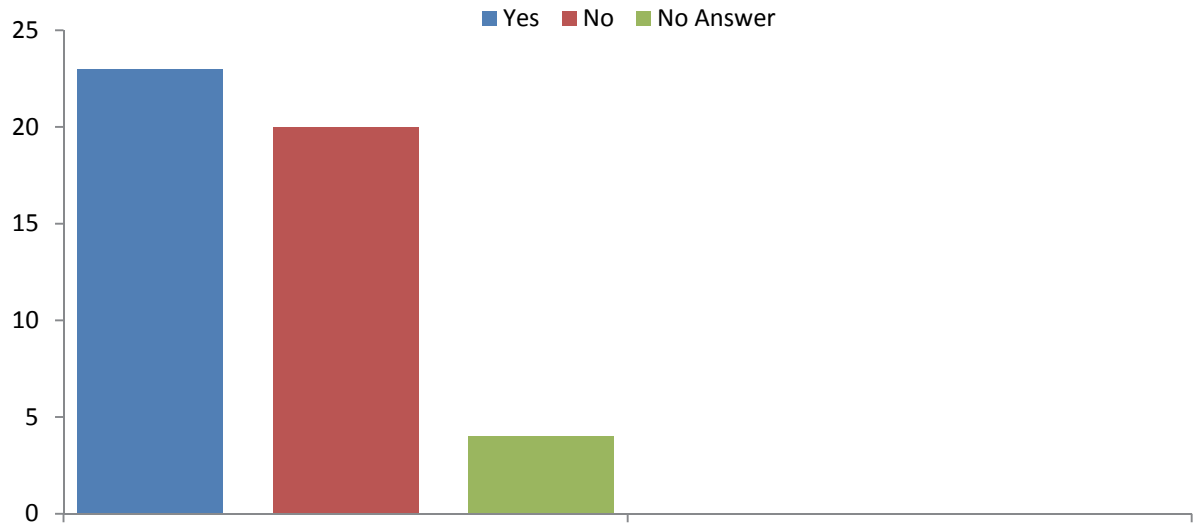
New York's Department of Financial Services said state regulators work with insurance companies in implementing their individual telematics UBI programs. Pursuant to New York Insurance Law, all such programs are required to meet certain standards which must be approved by the Department prior to their implementation. Montana's DOI in its response stressed the fact the telematics UBI market is still in its early development. Because UBI is relatively new in Montana and the interest for UBI by consumers is not known, it is difficult, noted the DOI, to accurately assess how competition has changed in the presence of telematics UBI. Ultimately, the personal auto insurance market in the state is greatly driven by rate levels, said the DOI, and concluded by underscoring that while privacy is valued by a great number of consumers in the state, the better drivers in the state will likely try a telematics plan at some point in the future.

Michigan's DOI, in its response, highlighted the high degree of competition in the state's insurance market, with more than 100 insurers offering auto insurance plans. Therefore, consumers can choose the auto insurance plan with the best price and best service for their varying situations. The DOI noted Michigan law does not require insurers offering telematics UBI programs be competitive beyond this scenario. For example, regulators would not mandate any of the insurers to offer such programs nor consider telematics UBI are not acceptable rating plans because only one or a handful of insurers use them.

To our question if a state has any specific concerns regarding the marketing and use of telematics UBI products, 23 jurisdictions answered in the affirmative, listing their concerns, while 20 jurisdictions responded they presently have no particular concerns. Four jurisdictions provided no answer (Figure 2.)

The survey listed four reasons for concern, thought to be more common according to prior research, for regulators to choose and an option to add on that, expand or elaborate. The four concerns listed were: 1) claims management; 2) pricing fairness between UBI consumers and those who wish to not participate; 3) privacy issues; and 4) data ownership and portability. While the issue of privacy figured prominently in most of the responses, states' answers varied in their nuance and choice of concerns that often went beyond the four listed issues.

Figure 2: State Concerns with Telematics UBI Maketing and Use
Source: CIPR



The Delaware DOI stated its concerns regarding telematics span all four choices, but more time is needed following the implementation of HB 56[101] in May 2014 to see if any particular issues emerge and/or consumers submit any complaints. The state of New Hampshire also noted all four issues are of concern, with a particular emphasis on privacy. Furthermore, the state DOI stressed that telematics programs are monitored to make sure they all strictly voluntary.

The Insurance Division of the Department of Business Regulation of the state of Rhode Island pointed to all four issues as equally concerning and added that currently, telematics programs are offered solely as an option to consumers. Insurers may offer discounts only and may not surcharge risks or use to non-renew. Similarly, the DOI of the state of Indiana responded all four are concerns shared by Indiana regulators, adding another concern is the issue of transparency to the policyholders. The Maryland DOI also said all four issues are regulatory concerns, adding that equally concerning are if appropriate disclosures regarding how the program works to consumers are made and the accuracy of the data transmitted to the insurer via the device. All four issues were also concerns noted by the DOI of the state of Arizona.

The Georgia DOI answered that when telematics UBI programs were first introduced, there were some privacy concerns, but because the use of UBI is strictly voluntary, these concerns are reduced as the consumers have to consent to participate in the program.

The Florida DOI added the accuracy of the algorithms used to create UBI scores as a serious regulatory concern in addition to the concerns about privacy, data ownership, and portability and claims management. The New York DOI shared its main concerns were with claims

[101] House Bill # 56 w/SA 3. State of Delaware 147th General Assembly.

management and data ownership and portability, while the Connecticut DOI pointed to privacy and data concerns.

The State of Montana's DOI stressed concerns regarding disclosure of how the data collected may be used, privacy issues, underwriting and renewal. The Department of Insurance and Financial Services of Michigan noted it is concerned about classifications used are not unfairly discriminatory. The DOI of the state of Hawaii, the Bureau of Insurance of the state of Maine and the Washington DOI noted concerns with pricing fairness, privacy, and data ownership, and portability. Finally, the North Dakota expressed concerns with rebating issues with telematics UBI plans.

To the question if a jurisdiction has enacted or proposed any legislation regarding any of the concerns with telematics UBI, state DOIs responded either by noting the same telematics-related legislation discussed earlier or by saying that no additional legislation is required. Only the state of New Hampshire pointed to new state statutes whose main intent is to deal with privacy issues. The DOI added that although these statutes[102] did not specifically address UBI devices, they did encompass them.

The last question of the survey inquired if any of the jurisdictions has received a consumer complaint connected with a telematics UBI program. Two state DOIs, Maryland and New Jersey, answered in the affirmative. The Maryland DOI has received two complaints with regard to UBI programs. The first complaint was directly related to advertisement of the UBI program. Here, the insured felt the insurer failed to disclose the program required a subscription to an outside service (i.e., OnStar, Ford SYNC, In-Drive). The second complaint alleged the insurer did not properly inform the insured how long the device was required to be installed in the vehicle in order to receive a discount. The DOI of New Jersey said it received two complaints, one related to the applicable rating discount and the other related to the mechanics of using the telematics device.

[102] HB1567, HB1619, HB1324. 2014 Session of New Hampshire Legislature.

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Reinsurance Commutation

By Jim Klann, FCAS, MAAA

When an insurer and a reinsurer enter into a contract, they expect a lengthy relationship. The contract may cover policies written by the primary insurer over (for example) a 12-month period, but it may be years before the last claim covered under such policies has closed and final reimbursement has been made from the reinsurer to the insurer.

Sometimes, as this process unfolds, one party or the other will want to terminate the relationship early. When this happens, the parties have the option of executing a *commutation agreement.* The International Risk Management Institute defines a commutation agreement as "an agreement between a ceding insurer and the reinsurer that provides for the valuation, payment, and complete discharge of all obligations between the parties under a particular reinsurance contract".[1] The reinsurer typically makes an immediate payment to the primary insurer. In return, the reinsurer is absolved from all future involvement with the claims or policies covered by the agreement.

Commutations present challenges to the actuary in the areas of pricing, reserving, and accounting. This study note will focus on the accounting for, and taxation of, commutations. However, in order to understand the accounting, we will need to look at least briefly at the motivations of the parties to a commutation, and at pricing and reserving.

Motivations of the Parties

Commutations arise for many reasons:

(1) Either the primary insurer or the reinsurer may wish to exit a particular line of business. The reinsurer exits at once by commuting. For the primary insurer, commuting may be a first step, followed by a *loss portfolio transfer* to a third party. Loss portfolios may be easier to transfer without the uncertainty of a reinsurance overlay.

(2) Either the primary insurer or the reinsurer may have concerns about one another's solvency. If the reinsurer is shaky, commutation eliminates credit risk to the primary insurer. If the primary insurer is shaky, commutation provides an immediate cash infusion, and allows the reinsurer to avoid potential future problems with a liquidator who may take over the primary insurer.

(3) The relationship between the primary insurer and reinsurer may have frayed over time. There may have been disputes over claim resolution, or over contract provisions. The parties may prefer a single negotiation over commutation price, followed by termination of the relationship, to protracted argument over other issues.

(4) Even in the absence of acrimony, the primary insurer and reinsurer may have different ideas about loss development under the underlying policies. If actuaries for the two parties are setting drastically different loss reserves, a commutation at an intermediate price may leave each side convinced that it is getting a good deal.

[1] http://www.irmi.com/online/insurance-glossary/terms/c/commutation-agreement.aspx

In some cases, the original contract executed between a primary insurer and a reinsurer may provide for commutation under given terms, after a given period of years. These provisions are typically found in reinsurance for long-tailed lines such as accident and health and workers compensation.

Pricing

The process of pricing a commutation begins with each side estimating the claim payments which would occur in the absence of commutation. To the reinsurer, these anticipated payments are loss reserves. To the primary insurer, they are reinsurance recoverables. The reserves and recoverables will most likely include case reserves, claims incurred but with not enough reported, and claims incurred but not yet reported at all. (The latter two amounts will be classed as IBNR for the remainder of this note.) Given normal uncertainty, it is unlikely that the two parties' estimates will be identical.

Next, each party will attempt some estimate of *when* the anticipated payments will occur, and apply a discount factor to account for risk and for the time value of money. Neither the time estimate nor the discount factor will likely be identical for the two parties. One factor likely to generate different discount factors is that the reserves represent a risky liability to the reinsurer, whereas the recoverables represent a risky asset (or contra-liability) to the primary insurer.

Losses are booked on a nominal basis, but valued for purposes of pricing a commutation on a discounted basis. Discounting can be significant for long-tailed lines and (especially) for excess of loss reinsurance. It will thus sometimes happen that the price of a commutation is significantly lower than *either* party's booked estimate of nominal loss.

Each party must consider the effect of taxation on the value of a commutation. Taxation will be addressed more fully later in this note.

Finally, each party must consider unique factors relating to the motives for the commutation. For example, when solvency is an issue, the parties must consider the possible distribution of future claims as well as the expected value. The healthy party may be willing to commute at a price which generates a small expected economic loss, in return for avoiding the possibility of a major loss if claims prove larger than expected and the counterparty becomes insolvent.

Ultimately, the two parties must agree on a commutation price, or the commutation will not take place. Typically each side will have a range of acceptable prices, and negotiating skill and leverage will determine where within the range of overlap that the settlement falls.

Accounting and Reserving

The following example concerns two insurance companies, Primary and Re. Primary has been writing a book of business for the past three years, and ceding a portion of it to Re. We will assume that all Primary policies have an effective date of January 1, so that policy and accident years are the same. We will further suppose, after three years, that losses have developed as follows:

Primary:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1250
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	500
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	500
		2014	1000	750	
		2015	1000		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		

Note that this example follows the SAP convention of offsetting ceded recoverables against losses.

Now we will examine how Re accounts for its portion (the portion ceded by Primary) of the same book of business. We will assume, somewhat simplistically, that Re consistently reserves its portion of the book at 10% higher than Primary. This may be because of differences of opinion about the future of the claims outstanding, or it may simply reflect differences in reserving philosophy or methodology.

Re:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	@24 mos	@36 mos
Reserves	Gross	2013	1100	825	550
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	@24 mos	@36 mos
Ultimate loss	Gross	2013	1600	1825	1800
		2014	1600	1825	
		2015	1600		

Now we will suppose, at the end of the year 2015, that Primary and Re choose to negotiate a commutation applying to all claims within the 2013 policy year. As seen above, Primary believes that future reimbursement from Re will equal 500. Re believes that its future payments to Primary, for the 2013 policy year, will equal 550. The commutation price negotiated between Primary and Re will quite possibly be lower than either number, because of the time value of money.

We will suppose the parties agree on a price of 400. Note that Primary is considered the buyer in this transaction, and Re the seller, even though money moves from Re to Primary, because the item being sold is a liability (responsibility for future claim payments). We will assume this transaction closes before the end of 2015, and reexamine each company's triangles thereafter.

For clarity we will show the original triangles without the commutation, copied from above, alongside the adjusted triangles after the commutation, side by side:

Primary without commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1250
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	**@24 mos**	**@36 mos**
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	500
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	500
		2014	1000	750	
		2015	1000		
			@ 12 mos	**@24 mos**	**@36 mos**
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1750
		2014	1500	1750	
		2015	1500		

Primary with commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	1000	2000	2500
		2014	1000	2000	
		2015	1000		
	Ceded	2013	500	1000	1650
		2014	500	1000	
		2015	500		
	Net	2013	500	1000	850
		2014	500	1000	
		2015	500		
			@ 12 mos	**@24 mos**	**@36 mos**
Reserves	Gross	2013	2000	1500	1000
(case+IBNR)		2014	2000	1500	
		2015	2000		
	Ceded	2013	1000	750	0
		2014	1000	750	
		2015	1000		
	Net	2013	1000	750	1000
		2014	1000	750	
		2015	1000		
			@ 12 mos	**@24 mos**	**@36 mos**
Ultimate loss	Gross	2013	3000	3500	3500
		2014	3000	3500	
		2015	3000		
	Ceded	2013	1500	1750	1650
		2014	1500	1750	
		2015	1500		
	Net	2013	1500	1750	1850
		2014	1500	1750	
		2015	1500		

Re without commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1250
		2014	500	1000	
		2015	500		
			@ 12 mos	**@24 mos**	**@36 mos**
Reserves	Gross	2013	1100	825	550
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	**@24 mos**	**@36 mos**
Ultimate loss	Gross	2013	1600	1825	1800
		2014	1600	1825	
		2015	1600		

Re with commutation:

			@ 12 mos	@24 mos	@36 mos
Paid losses	Gross	2013	500	1000	1650
		2014	500	1000	
		2015	500		
			@ 12 mos	**@24 mos**	**@36 mos**
Reserves	Gross	2013	1100	825	0
(case+IBNR)		2014	1100	825	
		2015	1100		
			@ 12 mos	**@24 mos**	**@36 mos**
Ultimate loss	Gross	2013	1600	1825	1650
		2014	1600	1825	
		2015	1600		

Primary's gross paid losses and reserves are unchanged, as the decision to commute the claims should not affect Primary's assessment of what the gross ultimate cost of these claims will be. The commutation payment is booked as a recovery of paid losses, and ceded reserve recoverables for 2013 are set to zero.

Re experiences the commutation as an increase in paid loss, with reserves again set to zero. Re's ultimate losses decline to the extent that the commutation payment (400) was less than Re's previously booked loss reserves (550).

Note that the commutation is severely distorting to Primary's ceded and net loss triangles. Primary shows downward development in 2013 net paid losses, which would be very unusual in the absence of a commutation. Primary's ceded 2013 reserves drop to zero, and 2013 net incurred (ultimate) losses develop upward (from 1,750 to 1,850) even though there has been no change in Primary's estimate of gross ultimate loss (which remains at 3,500).

Re's loss triangles also show the effects of the commutation. Re's 2013 paid losses ratchet sharply upward between 24 and 36 months. Re's 2013 incurred (ultimate) loss develops downward, not due to any change in estimates of the ultimate number or severity of 2013 claims but only due to the commutation price (400) being lower than previously booked loss reserves (550).

Distortions to net incurred loss will show up in the loss triangles in Schedule P, Part 2 of each company's Annual Statement. Distortions to net paid loss will show up in Schedule P, Part 3.

In addition, a commutation will distort the claim closure rates in Part 5 of the reinsurer's Schedule P, since from the reinsurer's standpoint a commuted claim is considered to be closed.

Actuaries must take such distortions into account when calculating loss development factors, when assessing reserve adequacy, or when using Schedule P to review claim severity or closure trends. For this reason, commutations must be disclosed by the ceding (buying) company in Section E of the reinsurance note in the Note to Financial Statements. The disclosure must include a list of reinsurers and the amount of loss, loss adjustment expense, and earned premium commuted from each to the ceding company during the year.

The disclosure, however, does not break down the amounts commuted by accident year or line of business, and therefore will not suffice to properly adjust loss triangles. Actuaries will require more detailed internal information if and when they need to do so. Also, there is no disclosure requirement for the reinsuring (selling) company.

Consider also the effect of the commutation on Primary and Re's statutory income statements and statutory surplus. Primary has replaced an offset to liabilities booked at 500 with an asset (cash) of 400. This results in a drop of 100 in pretax income and a drop of 100 in statutory surplus (assuming the recoverables were authorized or secured and counted in statutory surplus). Re has replaced a liability of 550 with a cash payment of 400. This results in an increase of 150 in pretax income and in statutory surplus. (Tax considerations will likely have further effects on statutory surplus.)

Finally, consider that this example has been simplistic in that it involved the commutation of an entire policy year within an entire book, and examined the impact on that book as a whole. In practice, commutations may cut across lines of business and policy years. Statutory accounting principles require that "commuted balances shall be written off through the accounts, exhibits, and schedules in which they were originally recorded"[2].

In practice, this means that the single commutation price may need to be allocated among multiple lines and multiple years, and ultimately down to individual policies so that insurers can make an accurate assessment of profitability among various cuts of their book. This can be especially challenging when excess of loss reinsurance is being commuted, since the commutation payment should logically be applied only to those claims—some known and some still unknown—which ultimately pierce the excess layer.

Accounting and Taxation

For tax purposes, unpaid losses are valued on a discounted basis, as discussed elsewhere in the syllabus.[3] Companies determine the appropriate discount factor by accident year and line of business, by using either their own or IRS payment patterns and IRS published discount rates.

In the case of a commutation, note that the buying and selling company need not, and probably will not, have applied the same discount factor to the relevant unpaid losses. First, in the case of nonproportional reinsurance, the reserves will be classified according to the originating line of business by the ceding (buying) entity, but as "nonproportional assumed liability" reinsurance by the reinsuring (selling) entity.

In the case of quota share (proportional) reinsurance, the ceding and reinsuring entities will classify the business the same. However, one company may elect to use its own historical payment patterns, and the other may use IRS payment patterns. Or, both companies may use their own payment patterns, which will inevitably be different.

For our example, we will assume that Primary applies a discount factor of 0.875, and Re applies a discount factor of 0.85. We will further assume that both companies are facing an effective marginal tax rate of 35%, although tax rates also need not be equal, as there are a myriad of factors that may influence a company's marginal tax rate.

[2] National Association of Insurance Commissioners, *Accounting Practices and Procedures Manual*, 2012, Statement of Statutory Accounting Principles 62R, "Property and Casualty Reinsurance," paragraph 63.
[3] Odomirok, K.C.; McFarlane, L.M.; Kennedy, G.L; and Brenden, J., *Financial Reporting Through the Lens of a Property/Casualty Actuary*, Casualty Actuarial Society, 2012, pages 248-251

As a result of the commutation, Primary therefore experiences a taxable income gain of:

400 – (500 * 0.875) = -37.5

and a tax decrease of 37.5 * 35% = 13.13.

Re experiences a taxable income gain of

(550 * 0.85) – 400 = 67.5

and a tax increase of 67.5 * 35% = 23.63. Note the asymmetry in results, caused by both the differing reserve amounts and the difference in discounting. The calculated tax increases and decreases apply over and above whatever other income taxes the two companies may have incurred during the year; they represent the result of the commutation itself. Each company should of course consider the tax impact of commutation at various prices as part of the process of negotiating the commutation price.

AMERICAN ACADEMY *of* ACTUARIES

NAIC PUBLIC HEARING ON CREDIT-BASED INSURANCE SCORES

APRIL 30, 2009

My name is Jeff Kucera. I am here today representing the Casualty Practice Council of the American Academy of Actuaries.[1] I am employed as a senior consultant with EMB America LLC, an actuarial consulting firm. I am a fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries. I will be addressing actuarial practice applicable to risk classification and specifically, the use of credit-based insurance scores for rating and underwriting purposes. I am also here to offer the assistance of the Casualty Practice Council in your continued exploration of credit-based insurance scores.

In particular, my comments will demonstrate that the use of credit-based insurance scores allows the insurer to better segment insurance risks for the purpose of charging appropriate rates. I will address the following items:

- Current economic circumstances;
- Definition of what constitutes a credit-based insurance score;
- Evaluation of how insurers use credit-based insurance scores; and
- Discussion of how current economic conditions have affected policyholder premiums related to credit-based insurance scores.

Most companies now use credit-based insurance scores in the rating of personal lines such as private-passenger automobile or homeowners' insurance. The use of credit-based insurance scores helps insurance companies charge those risks that are likely to generate greater costs higher premiums, while those likely to generate lower costs get lower premiums. The removal of such insurance scores will not lower overall insurance premium; rather, it will redistribute the premium charges so that those risks with lower expected costs will pay more than is actuarially fair, while those with greater expected costs will pay less than is actuarially fair.

[1] The American Academy of Actuaries is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

Current Economic Circumstances

As we are all aware, the United States is suffering from a major economic crisis, which has imposed considerable hardship on both individuals and businesses. A significant aspect of the current economic crisis is the severe tightening of the credit markets. This may suggest that credit standards are being tightened by banks and other sources of commercial credit. This comes at a time when increasing numbers of Americans are experiencing loss of income, including decreases in the value of many of their assets and unemployment. These problems are significant and ongoing, and they raise questions regarding the use of credit rating in insurance. These issues span multiple lines of insurance, but for individuals, they have the greatest impact on private-passenger auto and homeowners' insurance.

The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the voice of the profession on public policy issues. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance.

The purpose of my presentation on behalf of the Casualty Practice Council today is to assist the NAIC in its analysis of these questions and to offer to work with the NAIC in its continuing study of these issues. The Casualty Practice Council has a history of working with the NAIC on this and many other topics. In fact, the Risk Classification Subcommittee of the Academy's Products, Pricing, and Market Committee presented the NAIC with a report, "The Use of Credit History for Personal Lines of Insurance,"[2] in November 2002, which is still relevant today.

The NAIC has identified three issues to serve as a basis for discussion. Our comments will provide an actuarial context for each of these issues.

Definition of What Constitutes a Credit-Based Insurance Score

An insurance score is a numerical score or ranking assigned to an insurance risk (i.e., a prospective insured) based on that risk's underlying characteristics. A common purpose of insurance scoring is to generate useful information in underwriting and pricing insurance for the individual risk being scored. The score provides a relative measure of the expected cost to the insurance company associated with the risk.

A credit-based insurance score utilizes various attributes found in a typical individual's credit report. There are several different scoring models currently in use to calculate credit-based insurance scores, including models developed by third-party vendors and proprietary models built by individual insurance companies. The type of credit attributes generally having the

[2] http://www.actuary.org/pdf/casualty/credit_dec02.pdf (last visited on Apr. 24, 2009).

greatest effect on an individual's insurance score include: number of inquiries into opening new accounts, accounts 30 days or more past due. While the attributes and relative values are not identical for all companies, generally the higher the credit-based insurance score, the better an individual's credit rating.

The importance of credit-based insurance scores is that there is a strong correlation between them and the expected costs associated with the risk. In other words, in a group of insureds who are identical in every other way, insureds with favorable insurance scores are significantly more likely to have better loss experience than insureds with unfavorable insurance scores. Consequently, credit-based insurance scores are a statistically reliable tool for segmenting risks into different groups with different expected cost levels. This has been demonstrated in a number of studies and reports, some of which we have listed in Appendix A.

Evaluation of How Insurers Use Credit-Based Insurance Scores

Most state insurance laws prohibit the use of insurance rates that are excessive, inadequate, or unfairly discriminatory. Principle 4 of the Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* states that, "A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer."[3] Thus, the overall average rate level should be set so that the total premium collected from all risks is sufficient to cover the total expected costs. Additionally, the individuals' rates should be set such that the premium collected from each individual risk, or group of similar risks, reflects the expected costs for that individual risk (or group of similar risks).

In a 2001 survey, 90 percent of the responding insurers (from the top 100 personal lines companies) indicated that they were using credit data.[4] According to the survey, the use of credit data is a relatively recent trend; more than half of the responding insurers using credit said that they began using credit in 1998 or later. Today, the number of companies using credit is likely even greater. Some insurers use insurance scores simply to determine whether a prospective insured qualifies to be written by the company. More typically, insurers also use insurance scores to help segment risks into different groups with similar expected costs for the purpose of rating. In such cases, the insurer may use the insurance score directly as a rating factor, also called a "risk classification factor," similar to an amount of insurance for homeowners' insurance or prior violations for private-passenger auto insurance. Alternatively, an insurer with multiple "tiers" representing different levels of expected cost may use the insurance score to help assign risks to the appropriate tier. Whether insurance scores are being used as a risk classification or

[3] http://www.casact.org/standards/princip/sppcrate.pdf (last visited on Apr. 22, 2009), *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, Casualty Actuarial Society, May 1988.
[4] "Insurance Scoring in Personal Automobile Insurance—Breaking the Silence," Conning & Company, 2001.

tiering factor, the impact is the same: insurance scores are being used to segment risks into homogenous groups so that appropriate premiums can be charged.

With respect to insurance scores as a risk classification or tiering factor, the actuary is guided by Actuarial Standard of Practice (ASOP) No. 12, *Risk Classification*.[5] Rating plans for individual lines of insurance generally include several different risk classifications. For example, private-passenger auto lines use such risk classifications as the make and model of the car, age of the driver, prior traffic violations and accidents, etc. For homeowners' insurance, examples of risk classification include amount of insurance, type of home construction, prior loss history, etc. The key section of ASOP No. 12 that is applicable to the use of insurance scores is section 3.2.1., which reads in part as follows:

> Relationship of Risk Characteristics and Expected Outcomes—The actuary should select risk characteristics that are related to expected outcomes. A relationship between a risk characteristic and an expected outcome, such as cost, is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic. In demonstrating a relationship, the actuary may use relevant information from any reliable source, including statistical or other mathematical analysis of available data. The actuary may also use clinical experience and expert opinion.
>
> Rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics. In the context of rates, the word *fair* is often used in place of the word *equitable*.
>
> The actuary should consider the interdependence of risk characteristics. To the extent the actuary expects the interdependence to have a material impact on the operation of the risk classification system, the actuary should make appropriate adjustments.

The summary of articles on credit in Appendix A includes several studies that have shown that credit scores reflect significant differences in expected loss costs. Thus, credit scores are appropriate tools for risk differentiation. Rates based on groups differentiated by insurance score are not excessive, inadequate, or unfairly discriminatory.

The removal of such insurance scores will not lower overall premium collected; it will only redistribute the premium collected such that risks with lower expected costs will pay more, and those with greater expected costs will pay less.

While the evidence may only be anecdotal, most companies report that the use of insurance scores, along with multivariate rating and other new rating factors, have allowed them to write more risks from the general population than before these features were introduced.

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[5] http://www.actuarialstandardsboard.org/pdf/asops/asop012_101.pdf (last visited on Apr. 22, 2009), Actuarial Standard of Practice No. 12, *Risk Classification (for All Practice Areas)*, adopted by the Actuarial Standards Board, Dec. 2005.

If the NAIC determines that further studies may be appropriate, the Casualty Practice Council would be pleased to assist the NAIC in such studies.

Discussion of How Current Economic Conditions Have Affected Policyholder Premiums Related to Credit-Based Insurance Scores

While our current economic condition is certainly on everyone's mind, it is still uncertain exactly how this will affect overall insurance costs and, therefore, overall insurance prices. Some regulators or other public officials may be concerned that if the current economic crisis causes insurance scores to worsen, it will lead to unwarranted premium increases. It is important to consider both the impact on the aggregate premium and on individuals' premium.

First, it is important to consider the impact on the aggregate premium. Insurers use insurance scores to determine appropriate rate relationships between risk classes, not to determine overall premium need. Assume for a moment that insurers continue to maintain the same rate relationships for different insurance score ranges, and that the current economic crisis causes every insureds' insurance score to worsen. The actuary would observe this distributional shift or change and adjust overall rate levels so that the total premium collected by the insurance company remains the same and the integrity of the rate relationships among risks remains intact.

This is no different than any other distributional shift, such as an increase in the average value of homes, which an actuary has to consider when setting the overall rate level. Part of a typical actuarial rate review is an analysis of any shifts in distributions that affect the premium level. The actuary would adjust for these shifts in determining appropriate future rates. As a result of this standard ratemaking practice, any shift in insurance scores due to the current adverse economic conditions will not result in any long-term impact on overall premium collected.

Second, it is important to consider the impact on the individuals' premium.[6] As stated earlier, studies have demonstrated that insurance scores are an effective means of segmenting risks. Because of this, many companies now vary the rates charged to risks with different insurance scores. Some regulators or other public officials may be concerned that a dramatic shift in credit scores could disrupt the current relative rates among risks with insurance scores; in other words, perhaps the difference in expected cost levels among insureds with favorable and unfavorable scores will be less significant.

This, too, is not a problem that is unique to insurance scores. The gender and age of drivers have long been recognized as important rating characteristics for personal automobile insurance. There have been, and still are, very significant differences between the rates charged to young

[6] It is important to remember that any distribution shift is likely to have a smaller effect on renewal business than on new business, because some states and/or companies only permit the use of such scores for renewals if it results in a more favorable rate for the individual insured.

males and young females, reflecting the higher cost of auto insurance for young male drivers compared to young female drivers. However, over time, the driving habits of young males and young females have become more similar, and while the difference in risk is still significant, it is not nearly as large as it was in the past. As this trend has developed, insurers adjusted classification plans to reduce the rate differentials to reflect it. If the actuary regularly analyzes the indicated rate differentials for different insurance score ranges, the rate differentials will be changed if more recent data suggests it. This potential shift in group differentials, and motivation or intent to be competitive, provide incentives for companies to regularly review their rate differences.

One of the other roles of an actuary is to regularly review the data to decide whether the overall average rate level is appropriate and whether the rate differentials for risks with different insurance scores need to be adjusted. By doing this, the actuary can ensure that the rates are actuarially sound,[7] regardless of the effect the current economic crisis has on personal insurance scores.

It is possible that a sudden or immediate distribution shift could result from the current economic conditions, and that, by the time it works its way into the actuary's data, many insureds will have already been harmed. While we have been suffering through the current economic conditions for approximately six months, we are unaware of any quantifiable evidence that has surfaced to demonstrate that such a dramatic shift has been occurring. It is our opinion, based on anecdotal evidence, that any shift thus far has been minor. This could be because renewal business, which makes up the majority of any company's business, is less likely to be affected by a shift. Ascertaining whether an actual shift of any significance has occurred would require a study to look at the distribution of insurance scores of several companies over a period of time. The Casualty Practice Council is willing to assist the NAIC should it decide to pursue such a study.

On behalf of the Academy and the Casualty Practice Council, I thank you for the opportunity to speak to you today. To the extent that we can further assist the NAIC in its endeavors on this topic, the Casualty Practice Council volunteers its services. We look forward to working with you.

If time permits, I am happy to answer any questions you may have.

[7] http://www.casact.org/standards/princip/sppcrate.pdf (last visited on Apr. 22, 2009), *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, Casualty Actuarial Society, May 1988.

Appendix A – Summary of Additional Articles on Credit Scoring

Several studies have already been conducted on the use of credit for rating and underwriting for both homeowners' and private-passenger auto insurance. In particular, the following studies may warrant review:

- *Predictiveness of Credit History for Insurance Loss Ratio Relativities* by Isaac Fair, (1999).
- *Use of Credit Reports in Underwriting* by the Commonwealth of Virginia, State Corporation Committee, Bureau of Insurance (1999).
- *The Impact of Personal Insurance Credit History on Loss Performance in Personal Lines* by James D. Monaghan (2000).
- *Insurance Scoring in Personal Automobile Insurance – Breaking the Silence* by Conning & Company (2001).
- *Use of Credit Information by Insurers in Texas* by the Texas Department of Insurance (December 2004).
- *Use of Credit Information by Insurers in Texas – the Multivariate Analysis* by the Texas Department of Insurance (January 2005).
- *Credit-Based Insurance Scores: Impact on Consumers of Automobile Insurance* by the Federal Trade Commission (July 2007).
- *Report to the Congress on Credit Scoring* by the Board of Governors of the Federal Reserve System (2007).

Testimony of
Kevin M. McCarty, Florida Insurance Commissioner,
Florida Office of Insurance Regulation
And Representing the
National Association of Insurance Commissioners

Before the
Subcommittee on Oversight and Investigations
Of the
House Committee on Financial Services

Regarding:
"The Impact of Credit-Based Insurance Scoring on the Availability and Affordability of Insurance"

May 21, 2008
Room 2128
Rayburn House Office Building

Kevin M. McCarty
Florida Insurance Commissioner
National Association of Insurance Commissioners

Testimony of Kevin McCarty
Florida Insurance Commissioner
National Association of Insurance Commissioners

Chairman Watt, Ranking Member Miller, and members of the Subcommittee, thank you for the opportunity to testify here today on the use of credit based insurance scores in the provision of personal lines insurance. I would also like to thank you for your leadership on this important issue.

My name is Kevin McCarty, and I am the Insurance Commissioner for the State of Florida. I am also here as the chair of the Property & Casualty Committee of the National Association of Insurance Commissioners. Empirical studies, including the 2007 Federal Trade Commission (FTC) Report, indicate the use of credit-based insurance scores, while accurate predictors of claims activity, disparately impacts certain classes of people.

In my testimony, I will share the State of Florida's actions and the role of credit-based insurance scores in Florida today. I will also provide my thoughts and concerns regarding the 2007 FTC Report. Likewise, I will report on actions by other states on this issue. As appendix one shows, different states have taken different approaches to the issue.

The Use of Credit-Based Insurance Scores in Personal Insurance Lines

Proponents argue that credit-based insurance scores are predictive of an insured's future claims experience, and is a necessary tool for underwriting and/or rating. Critics argue that the use of credit-based scores is merely another example of imposed discrimination against lower income individuals and protected classes of people. That is the heart of the debate: studies do show that credit scores can be predictors of future claim activity, but the same studies also show that the use of these scores disparately impacts certain classes of people, and thus has a discriminatory effect. A *National Underwriter* survey concluded that 14% of insurance professionals believed the use of credit scoring was ethical, 10% believed it was unethical, and the vast majority – 66% - were undecided.

The use of credit scoring forces us to examine the fundamental purpose of insurance, and the acceptability of factors used to determine underwriting and rates. In its simplest form, insurance is a contract that allows an individual or company to spread risk to avoid a catastrophic loss. For illustrative purposes, I will utilize auto insurance as my example. To accurately price this risk, insurance companies have historically used such factors as vehicle type, miles driven, marital status, moving violations and car accidents, among other factors, to assess the risk fully and charge premiums fairly.

We have now entered a new information age. By using an interconnecting network of databases, a dizzying myriad of information may be obtained about an individual through health provider visits, sex offender databases, insurance claims histories, consumer purchase preferences, internet usage, DNA/gene-testing, and credit scoring. It is important to understand that although many of these tools may show mathematical correlations with insurance claims, this does not necessarily make them fair and valid criteria for insurance purposes.

Other Rating Factors Considered to Be Inappropriate

The most notable example of this is the historical use of race in the rating of life insurance products. In 2002, the NAIC concluded several multi-state examinations of companies that rated life insurance differently based on the race of the applicant during the period from the 1930s to the 1970s. Even today, according to U.S. Census Bureau data, a Caucasian born in the United States has a life expectancy of 78 years, while an African-American has the life expectancy of 73 years. Based purely on actuarial rates, this could be used to justify a higher charged rate for life insurance.

While this outcome (African-Americans pay more for life insurance) might be technically correct from a purely actuarial perspective, it is counter to equal protection for consumers and not sound public policy. This is not an isolated example. In the 1990s insurance companies began considering the use of genetic testing for predisposition of inherited diseases as a means to evaluate risk more precisely when offering health insurance. Although this certainly would have produced worthy actuarial correlations justifying higher insurance rates for unlucky individuals

with a proclivity for inherited diseases, the United States Congress began to outlaw this practice in 1996 through the Health Insurance Portability and Accountability Act (HIPAA). Clearly legislators and regulators must weigh the benefits of simplistic claims prediction with sound public policy.

I must admit, the State of Florida has a checkered past of allowing the use of race-based premiums which were used prevalently in the life insurance industry during the period of the 1930s through the early 1970s. Therefore, as Insurance Commissioner, I am particularly sensitive to any rating factors that are highly correlated with race, ethnicity, religious background, or income level as are my fellow commissioners at the NAIC. A year ago, on February 9, 2007 in Tallahassee, I held a public hearing to review the use of occupation and education as underwriting or rating factors for private passenger auto insurance and its potential impact on Floridians. The hearing intended to answer the question of whether the use of occupation and/or education, either intentionally or unintentionally, is acting as a proxy for race. While the use of race as a rating factor was outlawed in Florida, we must remain vigilant of the use of any factors that appear to be highly correlated to race and income level. The findings stemming from this public hearing are detailed in a written report, *The Use of Occupation and Education as Underwriting/Rating Factors for Private Passenger Automobile Insurance*, March 2007, See Appendix 2.

The Credit Reporting System

Other problems with the use of credit scoring are inherent weaknesses in the credit reporting system. Although Congress has taken strides to improve the process, most notably through the Fair and Accurate Credit Transactions Act of 2003, a 2000 study by *Consumer Reports* magazine showed that 50% of credit reports contained errors. This is further exacerbated by identity theft, and also by the proliferation of access to credit as evidenced by the problems in the mortgage industry. Thus, even if this methodology were correct, it is possible that inaccuracies in the underlying data (credit reports) may invalidate their use. Credit reports also disproportionately negatively affect recent divorcees, recently naturalized citizens, the elderly, the disabled, those

with certain religious convictions, and younger individuals who have not established credit histories.

While the use of credit reports may always be problematic, the use of this tool may become increasingly salient given our nation's current economic conditions. Historically, rising unemployment rates, rising home foreclosures, and rising inflation in the costs of goods and services have contributed to a deterioration in credit histories. A downturn in the economy could potentially magnify differences in credit scores among vulnerable populations.

It is also important to note that empirical studies show no significant difference in the magnitude of claims that are filed, but only of the frequency of the claims. This is a subtle but important distinction. The studies show only that consumers with lower credit scores file more claims, not that they have greater loss events. It is quite possible the frequency of insured loss events is the same across populations, but those with higher scores are less likely to file a claim. This may be because wealthier individuals (with higher credit scores) may not file a legitimate insurance claim for a broken window or for minor fender bender, instead electing to pay the repairs themselves so as not to impact their claims history. Conversely, those with lower credit scores may be unable to pay out-of-pocket expenses based on their limited financial resources.

The empirical studies do not focus on this distinction, which leads to another important facet of the debate that has been overlooked. None of the studies to date, including the 2007 FTC study, suggests that the claims being filed are not legitimate, and moreover, that the rates being charged, absent credit-based insurance scores, are not actuarially sound.

Finally, the methodology used to create credit scores and credit-based insurance scores is opaque to consumers, varies from company to company, and can be negatively impacted by sound financial decisions that cannot possibly be linked to automobile or homeowners insurance risks. Not using credit cards, having too few credit cards, or having an installment loan -- all may negatively impact a credit-based insurance score. Consumers' decisions to finance their purchases using a Visa card, a home equity loan, or a department store credit card could negatively impact their credit-based insurance score and their insurance premiums.

Disproportionate Impact of Credit-Based Insurance Scores

The clear problem with the use of credit scoring is the relationship of credit scores to race, ethnicity and income status. The 2007 FTC Report asked and answered its own innocuous question: is credit scoring solely a proxy for race? This "straw man" question was not deserving of this report. Certainly we can all think of African-American and Hispanic acquaintances with excellent credit scores and conversely Caucasians with poor credit scores. If the phrase "solely a proxy" is intended to mean "direct substitute" than clearly credit scoring is not a proxy for race.

A more valid question is to ask whether there is a relationship between credit scoring and race/ethnicity and income status, and whether this relationship is strong enough to prohibit its use given the American values of equal protection and nondiscrimination. The analysis summarized by the FTC Report clearly demonstrates strong correlations between credit scoring and race/ethnicity that are statistically significant.

A Texas Insurance Department's 2004 report showed that African-Americans have an average credit score 10-35% below that of Caucasians, while Hispanics had scores roughly 5-25% worse. Quantifying this to percentile scores, the FTC's Report concluded that African-Americans average credits scores are in the 23rd percentile, while Hispanics were in the 32nd percentile.

Less publicized, but equally important, is the disparate impact on other segments of society. Credit-based insurance scores, because they are based on credit scores, have a negative impact on young people and the elderly. In testimony provided during a hearing in Florida on the use of credit-based insurance scores, an industry actuary admitted that average scores in the 25 to 30 year old age group are disproportionately lower than in older age groups. Other research has demonstrated that the elderly, because they tend to use credit less often and thus have fewer or no credit relationships, frequently have lower or no credit scores. Credit-based insurance scores penalize them as well.

Another consideration is that certain religions and those with certain religious beliefs do not use credit. Thus, some individuals following their religious beliefs will have low or no credit scores

and would be negatively impacted by the use of credit-based standards for rating insurance policies.

It is clear the use of credit-based insurance scores has a disparate impact on consumers of select racial, age, and religious groups. The predictive power of these scores is very likely not measuring any event risk, but rather indirectly measuring socioeconomic status. Some may disagree, but I believe this information is not necessary for proper underwriting and rating of the risks being insured.

I do not doubt that when initially adopted by the industry, there was no intent to use credit scores to impact minorities in a disparate manner or to discriminate. Yet, empirical studies indicate a negative impact on these groups, and the industry's attempt to ignore this issue shows a failure to treat its consumers fairly and equitably.

Florida Actions Regarding Credit-Based Insurance Scores

Based on the preponderance of evidence and after lengthy deliberation and hearings, the 2003 Florida Legislature enacted legislation to limit the use of credit-based scores in the provision of private automobile and personal residential insurance. The law (626.9741, F.S.) is modeled after the National Conference of Insurance Legislators (NCOIL) Model Law, but does differ in some areas to provide stronger consumer protections. Part of that law allows the Florida Financial Services Commission to adopt rules to ensure the spirit and intent of the law is met.

During the rule development process, the insurance industry has vigorously opposed the implementation with four separate legal challenges claiming: the Office did not have the authority to prevent the use of credit scoring as an underwriting/rating tool; the Office did not have the authority to define the term "unfairly discriminatory" as used in the statute; insurers did not have the necessary data to demonstrate the effect of credit scoring on the protected classes; and the definition of "disproportionate impact" was too vague.

The administrative law judge found the Office did have the authority to prevent the use of credit scores, and had the authority to define the term unfairly discriminatory. Moreover, the judge found that the insurers' lack of data was irrelevant. The judge did find that the definition of disparate impact needed to be defined more comprehensively, which the Office is correcting.

Conclusion and 2007 FTC Report

Based on the empirical evidence and the objective facts, I am of the opinion that the negative impact on classes of people based on race, age, and religion outweighs any suggested enhanced accuracy in pricing and underwriting, although the broader regulatory community has differing views.

In addition to credit-based insurance scores, I am also concerned about other tools currently being adopted for use in underwriting and rating that share many of the same characteristics of credit-based insurance scores. I am specifically troubled by the growing use of occupational ratings and education levels, and would encourage this Subcommittee to broaden the scope of its investigation to consider these rating factors as well.

Although there have been numerous academic studies of this issue, I eagerly anticipated the FTC Report mandated by the Fair and Accurate Credit Transactions Act (FACTA) of 2003 for delivery by December 24, 2005. The 2007 FTC Report was disappointing to me and many of my colleagues, as we expected an objective independent analysis. I agree with many of the sentiments expressed by FTC Commissioner Harbour in her dissenting statement.

I am particularly concerned that the data supplied by a handful of firms may have been selected to show the best case for the use of credit-based insurance scores. Despite these best-case scenarios provided by industry, the FTC still ultimately found that using credit scores disparately impacted ethnic minorities.

I am also concerned that no premium data were used, and the narrative appeared one-sided in support of the predictive power of the scores while simultaneously downplaying the negative

impacts. I was also troubled by the alleged economic advantages of using credit-based scores which are often featured as conjectures derived from industry assertions, but without any underlying analysis.

Finally, I am troubled by the process used in this report. I cannot understand why the insurance industry trade associations were privileged with advance copies of the report, while the insurance regulatory community was not. In addition, it is my understanding the regulatory actuaries involved in this project had no prior knowledge of the report's major findings or release.

State Involvement

I did agree with one section of the FTC Report especially as it pertains to Federal involvement in this issue: The state insurance regulatory community has focused on credit scoring problems, and has taken action. Forty-eight states have taken some form of legislative or regulatory action limiting the usage of credit scoring in the provision of insurance products.

Many have adopted model legislation on this issue; some states, like Florida, have adopted variations of this model. Many of these legal provisions pertain to the notification and transparency of the use of credit scoring including giving regulatory bodies access to the scoring model, notifying consumers about its use, and restricting insurance decisions based solely on this model.

Other states have gone further to restrict the use of credit history including the disallowance of credit history information as the sole basis for making underwriting or rating decisions, prohibiting the use of credit history information to cancel or nonrenew existing customers or increase their rates, or banning the use of credit history when underwriting or rating existing customers. Finally, four states have effectively banned the use of credit history information in underwriting or rating for automobile insurance.

The implication of the states' actions is clear. While I support potential action taken by this Subcommittee to limit the use of credit scoring, it is essential that federal action not preempt or

diminish consumer protection efforts already enacted by state legislatures. As state regulators, it is our sincere desire that the Federal government assist, not detract, from the states' regulatory efforts to address this important issue.

While the NAIC has not yet reviewed H.R. 5633, from the perspective of the State of Florida, the proposed bill contains several favorable provisions. Most notably, this legislation would require a more in-depth and objective study by the FTC on the relationship between credit scores and race/ethnicity to determine if there is in fact a "proxy effect" that shows a demonstrable correlation between credit scores and race/ethnicity. However, the FTC should not necessarily be the definitive report. Instead, I envision that other state and federal agencies be allowed to research this issue, and add their data analysis and expertise to substantively affect this debate.

Finally, while the NAIC has not had an opportunity to review H.R. 6062, I am also in favor of this legislation, sponsored by Representative Maxine Waters, which would exempt personal lines insurance from the Fair Credit Reporting Act. This bill implicitly recognizes that the 2007 FTC Report already found that credit scores disparately impacts minorities. Thus, we should initially eliminate the use of credit scoring as a starting point. If the FTC Report and other reports show unequivocally that credit scoring does not disparately impacts ethnic minorities, this issue could be revisited.

Furthermore, by addressing this issue from the perspective of the Fair Credit Reporting Act – not insurance – this is consistent with the federal-state relationship for insurance regulation first established through the McCarran-Ferguson Act of 1945.

However, since I am also here representing the NAIC, I must note that other state commissioners have differing views on this issue. Some states do not perceive credit scoring as a concern if it is one of many rating factors. In addition, some states believe that the process itself is not intended to be discriminatory, and any disparate impact based on race or ethnicity is coincidental. Some regulators believe that a majority of policyholders actually benefit from the use of credit scoring. Finally, other states may not agree for the need to expand this issue to other areas such as rating based on occupation and education.

Thank you for holding this hearing, for inviting me here today to participate, and for your continued interest and leadership on this critically important consumer protection issue. I am pleased to answer any questions you may have.

Appendix 1

NAIC Compendium on State Laws Regarding the Use

Of Credit Reports/Scoring in Underwriting

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

The date following each state indicates the last time information for the state was reviewed/changed.

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
AL (2/08)	Reg. 482-1-127-.01 to 482-1-127-.11	Personal lines	Make procedures used to obtain credit reports and insurance scores available to commissioner. If use credit scoring, file the scoring model with the commissioner. May not calculate score based on lack of credit history. May not use credit score as sole reason to deny coverage or refuse to renew.
AK (2/08)	§§ 21.36.460; 21.39.035	Personal lines	If use credit information in underwriting or rating, disclose that fact at the time the application is taken. Must consider in combination with other factors. May not consider absence of credit history or medical accounts. File credit scoring model with commissioner.
	Bulletin B04-11		Use departments' consumer brochures to inform the public about credit scoring.
AZ (2/08)	§ 44-1692	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	§§ 20-2102; 20-2109 to 20-2110	Property and casualty	Must provide specific reasons for adverse decision based on credit history or credit score.
	§ 20-1652	Property and casualty	Must get credit information promptly; cannot cancel or decline coverage more than 30 days after date of application based on credit report.
	§ 20-2113.01	All lines	A consumer reporting agency shall not sell data that includes information about an insurance score.
	§ 20-2110		In the event of an adverse underwriting decision, provide the specific reasons. If based on credit-related information, must decide factors that were primary cause. May not use the following credit-related factors for property or casualty premiums: absence of credit history, credit history based on collection of medical bills, total available credit, etc.
AR (2/08)	§§ 23-67-401 to 23-67-415	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Bulletin No. 14-2004	Personal lines property and casualty	Form for report on number of policies with increase/decrease in premium due to credit scoring.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
CA (2/08)	Civ. §§ 1785.10 to 1785.11	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting. Agency must notify consumer of rights and provide copy of file, including any credit score used.
	Civ. § 1786.18	All lines	May not include specified information in an investigative report except when used in underwriting life insurance expected to amount to $250,000 or more.
	Bulletin 76-3; Civ. §§ 1785.20,;1786.40	All lines	Users of credit reports who deny insurance or increase the prices charged on the basis of information contained in the reports must disclose the information that was the basis for the adverse decision.
CO (2/08)	§ 12-14.3-103	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting. Must notify consumers that will be using credit report for determination of eligibility for coverage or to determine premiums.
	§ 12-14.3-105.3	Life	May use credit report in underwriting life insurance expected to amount to $150,000 or more.
	§ 10-4-116	Personal lines property and casualty insurance	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	§ 10-4-616	Personal lines property and casualty insurance	Must notify consumers that new or updated credit information will be used in insurance underwriting or rating.
	§ 10-4-110.7	Homeowners	An insurer is required to provide notice to an applicant if the insurer uses credit scoring, claims history of the property, or clams history of the applicant in determining whether to insure the applicant's property.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
CT (2/08)	Guidelines for the Examination of Financial History Measurement Programs for Personal Risk Insurance Underwriting and Rating Plans	All lines	File measurement tools with the department. May only be used for new business. May not consider lack of credit history. Demonstrate coordination with expected risk of loss. Disclosure to customer.
DE (2/08)	18-900-906 Del. Code Reg §§ 1.0 to 12.0	Personal lines	May not use credit report or score unless the company has obtained authority to do so in its rate filing. File supporting information showing it is actuarially supported and is not the sole basis for denying coverage or assigning the consumer to a premium class. May not assign a higher rate because the consumer has no credit history. May consider insufficient credit history or no available credit history in setting a premium or rate, or underwriting an insurance policy, to the extent such us is actuarially justified and consistent with the rate filing. Models filed with the commissioner shall be considered as confidential proprietary information.
DC (2/08)	No provision		
FL (2/08)	Rule 69O-125.004	All lines	An insurer shall notify an insurance applicant in writing, or in the same medium as the application, that a credit report will or may be requested as part of the application process. If the application is denied, the insurer must tell the applicant in the notice of the denial how a copy of the credit report can be obtained so the applicant can identify the items that resulted in the denial.
	§ 626.9741	Personal lines Auto and homeowners	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
GA (2/08)	§§ 33-24-90 to 33-24-98	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Reg. 120-2-15-.01 to 120-2-15-.06	Private passenger auto, residential property	Insurer may cancel, nonrenew or decline a policy based on an individual's credit report. Insurer shall file this information quarterly with the commissioner. Insurer shall provide notice and the specific reason for the decision to the insured.
	Reg. 120-2-65-.01 to 120-2-65-.07	Private passenger auto	An insurer shall not use underwriting criteria or guidelines that result in the fictitious grouping of risks and results in unfair discrimination. The use of credit reports in determining an applicant's or insured's acceptability for coverage may create fictitious grouping and unfair discrimination.
HI (2/08)	§ 431:10C-207	Auto	Insurer shall not base standard or rating plan upon a person's credit bureau rating.
ID (2/08)	Bulletin 91-9	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	§ 41-1843	Property or casualty	May not charge a higher rate or cancel coverage based primarily on a credit rating or credit history.
	Ins. Reg. 18.01.19	Personal lines property and casualty	Aggregate weight given to noncredit factors must be at least as great as the aggregate weight given to credit factors. Items identified as trade secrets are not subject to public disclosure. Insurers must retain documentation for 5 years.
IL (2/08)	215 ILCS 157/1 to 157/55	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model) A certification that the treatment is actuarially justified is required.
	215 ILCS 157/22	All lines	Shall review and consider an exception to the risk score based on extraordinary life events, such as a catastrophic illness, divorce, death of a spouse, child or parent, involuntary loss of employment for three months or more, or identity theft.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
IN (2/08)	Bulletin 111 (July 1, 2002); Bulletin 130 (May 26, 2005)	Personal lines property and casualty	Submit to insurance department information on how credit information is utilized in underwriting, including the factors from a credit report that are included in a credit score, the computer model used to determine a credit score, any underwriting guidelines related to the use of credit scores and documentation to demonstrate the correlation between credit information and expected risk of loss. May not use credit scores after 10/1/02 unless the information is filed with the department.
	§§ 27-2-21-1 to 27-2-21-23	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model).
IA (2/08)	§ 515.103	Personal lines Property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model).
KS (2/08)	§§ 40-5101 to 40-5114	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model).
	Bulletin 2004-10 and 2005-1		Answer questions about above legislation.
	Reg. 40-1-50	Personal lines, property and casualty	Document factors considered in addition to credit score. Maintain evidence to support adverse action. Provide an explanation to an insured adversely affected.
KY (2/08)	§ 304.20-040	Auto	May not refuse to issue or renew a policy solely because of credit history, or lack of credit history of the applicant.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
LA (2/08)	§ 22:1214	Auto liability	Prohibits an insurer from terminating, refusing to renew or refusing to issue insurance because the insured has declared bankruptcy.
	§§ 22:1481 to 22:1494	Personal lines property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Directive No. 181 (2004)	Personal lines property and casualty	Directive addresses issues that have arisen in above statute.
	Directive No. 196 (2006)	Personal lines	Right of an insured to be exempt from the use of adverse credit information directly or indirectly caused by Hurricane Katrina and/or Hurricane Rita. All insurers writing personal lines are advised and directed to ignore all unfavorable entries entered into an individual's credit record beginning with entries posted on August 26, 2005, and all entries posted thereafter related to Hurricane Katrina and/or Hurricane Rita.
ME (2/08)	tit. 10 § 1313-A	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	tit. 24-A § 2917	All lines	Insurer must notify policyholder of reason intend to nonrenew, such as "credit report."
	tit. 24-A § 2169-B	Personal lines auto, property and casualty	May not use an insurance score calculated using income, gender, ZIP code, religion, etc. or raise rates based solely on credit score. Provide notice to consumer.
	tit. 10 § 1315	Credit reporting agencies	Disclose procedures to consumers to correct inaccurate credit reports.
	Bulletin 329 (2004)	Personal lines	Guidance on issues that have arisen.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
MD (2/08)	Ins. § 27-501	Private auto and Homeowners	May not refuse to underwrite based solely on credit history.
	Commercial § 14-1202	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	COMAR 31.15.11.01 to 31.15.11.11	Personal lines property and casualty and private auto	Insurers that use credit reports or credit scores must provide the commissioner with underlying information so the commissioner can ensure that reports are used in accordance with the law. Must notify consumers of actual reason for an adverse action.
	Ins. § 27-501	Personal lines property and casualty	May not use credit history to rate or refuse to underwrite homeowners coverage. May not use credit history to refuse to renew an auto policy or increase its premium. May use credit history to rate a new auto policy. Advise applicant that credit history is being used. May not consider the absence of a credit history as a factor.
	Ins. § 11-317	Private auto	Must provide a policyholder statement on rating factors. If use credit scoring, explain how it may cause an increase in premiums.
	Bulletin 02-14; 02-16	Personal lines property and casualty	Address questions in implementation.
MA (2/08)	93 § 51	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	93 § 62	Personal lines	If coverage is denied or price increased because of credit report, must notify consumer of right to receive a credit report.
MI (2/08)	Bulletin 2003-01-INS	Personal lines	File formula used to compute credit score with the department. Must recalculate credit score at least yearly.
	Bulletin 2003-02-INS	Personal lines	Revises 2003-01-INS to require rescoring only at the request of the policyholder. Notify consumers of their score and the discount tier they are in.
	Reg. 500.2151 to 500.2155	Personal lines	Beginning 7/1/05, insurers may not use credit scores as a rating factor.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
MN (2/08)	§ 72A.20 subd. 36	Private passenger auto and homeowners	May not reject, cancel or nonrenew a policy solely on the basis of credit information. If will use credit information, must notify consumer. If use a credit scoring system, must have methodology on file with the commissioner.
	§ 72A.501 subd. 2	Property and casualty	Code sections limiting collection of information do not apply to credit scoring, as long as the agent informs the policyholder.
MS (2/08)	Reg. 2003-1.1 to 2003-1.13	Personal lines	Disclose to consumer that insurer may gather and consider credit information. File scoring models with department. Must inform applicant if credit score or report adversely affected him.
MO (2/08)	Reg. tit. 20 § 500-9.100	Homeowner	Insurer must inform the Dept. of Insurance that it is using credit history as an underwriting guideline.
	§ 375.918	Personal lines property and casualty	May not use credit report or credit score as the sole rating factor. Must disclose the fact that will gather credit information. Must inform applicant if credit score or report adversely affected him.
MT (2/08)	*§ 31-3-111*	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	§§ 33-18-601 TO 33-18-611	Personal lines	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Most recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Advisory Memorandum Dated 9/7/01	Property and casualty	Montana law requires notification to consumers when their credit history adversely affects their ability to obtain or renew insurance.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
NE (2/08)	§ 44-7516.01	Private passenger auto	Policy must be accompanied by disclosure stating if any credit-based rating was used to determine rate charged for coverage.
	§§ 44-7701 to 44-7712	Personal lines	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider solely the absence of a credit history. Most recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
NV (2/08)	§§ 686A.600 to 686A.730	Personal lines	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. (NCOIL model)
	NAC 686A § 3		At renewal of a policy, the consumer credit report or insurance score used on the policy with the earliest effective date may be used, provided that the credit information is not more than 36 months old.
NH (2/08)	§ 359-B:4	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	§ 359-B:5	Life	May use credit report in underwriting life insurance expected to amount to $50,000 or more.
	Reg. Ins. 3301.01 to 3310.02	Auto and homeowners	If use credit scoring, must establish written standards to prevent discrimination and submit scoring model to the insurance department for review. Update credit score at least every 3 years. Submit to commissioner information on the factors considered and the statistical validation.
NJ (2/08)	§ 56:11-31	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	Bulletin No. 04-05	Property and casualty	Insurance scoring is permitted, provided that consumer protections are maintained. Submit model to department for review; credit score may be considered as only one of factors in determining rates; provide specific information if the insurer takes an adverse action.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
NM (2/08)	Bulletin 2002-001	All lines	All insurers that use credit scoring in underwriting or rate making must submit all portions of the programs that include the use of credit scoring to the Insurance Division.
	§ 59A-17A-1 to 59A-17A-9	Personal lines	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Reg. 13.8.6.1 to 13.8.6.9	Personal lines	Standards for the notification required in statute.
NY (2/08)	General Business § 380-i	All lines	Requires users of consumer reports to advise the consumer of adverse action taken in reliance on the report.
	OGC Opinion No. 96-1	Homeowners	Must give specific reasons for cancellation.
	Ins. Law §§ 2801 to 2809	Personal lines Property and casualty	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Reg. tit. 11 §§ 221.0 to 221.10 (Reg. 182)	Personal lines	May not take an adverse action based on a list of situations and events. Filings of scoring models must include listed information.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
NC (2/08)	§ 58-36-90 Bulletin 03-B-3	Private passenger auto	*May not use credit reports as sole rating factor. Must notify consumer if will be used. File scoring models with insurance department.* *Requirements for insurers who have trade secret pages in their credit scoring models*
ND (2/08)	§§ 26.1-25.1-01 to 26.1-25.1-11	Personal lines	*May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score. May not consider absence of a credit history unless insurer treats the consumer as otherwise approved by the Insurance Commissioner if insurer presents information that such absence relates to the risk for insurer, if consumer is treated as through the credit information is neutral, or if credit information is excluded as a factor. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)*
OH (2/08)	Bulletin 2002-2	Property and casualty	Insurers must establish that credit history and credit scores are valid risk characteristics. May not use for discriminatory purposes.
OK (2/08)	Guidelines adopted by Oklahoma State Board for Property and casualty Rates 6/15/2000 Bulletin No. PC 2001-07 *tit. 36 §§ 950 to 959*	Property and casualty Personal lines	Insurers that use credit history or credit scores must provide the board with underlying information to show they are using the information in accordance with OK law. Notify the insured of any adverse action taken as a result of the credit history or credit score. Revised credit scoring guidelines. May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
OR (2/08)	§ 746.635	All lines	Insurer, agent or insurance support organization may not prepare or request an investigative consumer report about a person involving an insurance transaction unless the insurer or agent informs the person that he may request to be interviewed in connection with the preparation of the report and that the person may request a copy of the report.
	Reg. §§ 836-080-0425 to 836-080-0440	Personal lines property and casualty	Prior to use, must notify consumer that credit history will be used. Must notify consumers during the application process that consumer may request information about the use of credit histories or insurance scores. Notice may be either in writing or in the same medium as the medium in which the application is made. The statement must address the following items: (a) Why the insurer uses credit history or insurance scores, (b) How the insurer uses credit histories or insurance scores, (c) What kinds of credit information are used by the insurer, (d) Whether a consumer's lack of credit history will affect the insurer's consideration of an application, (e) Where the consumer may go with questions. An insurer that uses credit history or insurance score in connection with a renewal shall notify consumer of that use when renewal offer is made. Notice shall address the items above. In addition, insurer shall inform consumer that consumer has a right annually to request the insurer use current credit information in the renewal process and that insurer will update the credit information used upon receiving such a request.
	§§ 746.600 to 746.686	Personal lines	*If adverse underwriting decision, provide consumer with specific reasons. If based on credit score, include specifics of no more than 4 reasons for score. Provide information on how to dispute. May use credit history only in combination with other factors to decline coverage. May not consider absence of history, number of inquiries, total available credit, etc. Consumer may request yearly re-rating. File scoring models with dept. Prohibits an insurer from rerating the policy or consumer when the consumer's marital status changes because of death or divorce. Allows an insurer to consider the last five years of claim history when rating a policy, however a insurer can use a longer claim history for the purpose of providing a discount. Allows insurer to consider the second or any subsequent claims in the last 5 years to determine whether to issue or renew a policy.*

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
PA (2/08)	Department Policy 40 P.S. § 1184; 40 P.S. § 1224; 75 Pa.C.S.A. § 1793; Tit. 31 Ch. 67.33	Personal Lines	The use of credit-based insurance scores is limited to new business underwriting eligibility and underwriting tier placement with the following requirements: 1) underwriting tier placement must be based upon mutually exclusive underwriting criteria that are kept on file at the company; and (2) underwriting tier placement must not be used at renewal, except where that use will result in placement into a lower rated tier. *Note: Companies using credit information as part of their new business pricing or tier criteria are expected to comply with the disclosure and adverse notice provisions of the federal Fair Credit Reporting Act.*
RI (2/08)	§ 6-13.1-21	All lines	May not request a credit report without first notifying the insurance applicant. If deny coverage or charge more, must notify consumers that is due to credit report.
	§§ 27-6-53; 27-9-56; R27-25-011; R26-16-007	Homeowners and personal auto	May use credit scoring for rating and underwriting only if the insurer demonstrates the predictive nature of the score to the insurance department. If requested by customer, must do new credit score every 2 years and lower rates if score is better. May not use revised score to raise rates except as noted. Rates may only be changed at time of renewal. List of factors that may not be considered. Reporting agency may not sell data or lists that include information about credit report.
	Bulletin 2002-16	Homeowners and personal auto	May not decline insurance for a new consumer based solely on the credit score. If use in rating, must demonstrate the statistically predictive nature of the score in the rate filing.
SC (2/08)	§ 38-73-740	Auto	Credit report used as basis for rate classification must be kept on file by the insurer for 3 years, and be available to the applicant.
	§ 38-73-425	Property and casualty	An insurer may use absence of credit as a criterion for underwriting if the insurer presents information satisfactory to the director.
	Bulletin 2002-04	Private passenger auto	May not refuse to insure, cancel or non-renew based solely on credit history or credit score. A filing including credit scoring must include justification. Disclose to consumer that insurer may gather and consider credit information.
	Bulletin 2004-09	Property and casualty	If insurers use lack of a credit score as an underwriting criteria, must provide the department with support.
	Bulletin 2004-12	Property and casualty	Must get approval from department before using lack of a credit score as a criterion for underwriting.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
SD (2/08)	Bulletin 2002-3	Personal lines property and casualty	May not use credit information as the sole rating factor.
TN (2/08)	Department Policy	All lines	Justification for use of credit scoring must be provided in the filing. Credit scoring cannot be the sole basis for determining rates.
	§§ 56-5-401 to 56-5-407	Personal lines property and casualty	May not include ZIP code as a factor. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. File scoring models with department. (NCOIL model)
	Bulletin Dated 12/13/04	Personal lines	Sets procedures for filing of credit scoring models.
TX (2/08)	Business and Commerce § 20.02	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	Business and Commerce § 20.05	Life	May use credit report in underwriting life insurance expected to have a value of $150,000 or more.
	Reg. 28 TAC §§ 5.9340 to 5.9342	Personal lines	Filing requirements for credit scoring models.
	Reg. 28 TAC §§ 5.9940 to 5.9941	Personal lines	Disclosure statement for consumers on how score is calculated, right to appeal, requirement for actuarial justification. Rate differences due solely to use of credit scoring must be supported by actuarial analysis
	Ins. §§ 559.002 to 559.151	Personal lines	Insurer may not use credit scoring that is computed using factors that constitute unfair discrimination. Shall not refuse to renew an insurance policy solely based on credit information. If credit information is used in underwriting or rating, disclose that fact at the time the application is taken. May not consider medical history codes. File scoring models with department.

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
UT (2/08)	§ 31A-22-1307	Homeowners liability	Insurer that uses credit reports in underwriting must comply with federal Consumer Credit Reporting Act.
	§ 31A-22-320	Auto	May only use credit information to reduce rates or in conjunction with other factors.
	Reg. R590-219-1 to R590-219-8	Private passenger auto	Inform consumer of factors used in adverse underwriting decision. May not use credit information to cancel or nonrenew coverage that has been in place 60 days or more or as the primary reason to refuse to issue a new policy.
VT (2/08)	No provision		
VI (2/08)	No provision.		
VA (82/08)	§§ 38.2-2114; 38.2-2212	Auto, fire	Insurers shall not refuse to renew an insurance policy solely based on credit information contained in a consumer report, bearing on an individual's creditworthiness, credit standing or credit capacity. If credit information is used in part, it shall be based on a consumer report procured within 120 days from effective date of nonrenewal.
	Administrative Letter 2002-6	All lines	Any insurer intending to use credit score must file the model prior to their use.
	§§ 38.2-2126; 38.2-2234	Homeowners, renters, auto	May not include income, gender, race, religion, marital status, ZIP code, nationality, etc. as factors. May not base rates solely on credit score or consider absence of a credit history. Must recalculate credit score after 3 years. May not consider medical history codes. (NCOIL model)

USE OF CREDIT REPORTS/SCORING IN UNDERWRITING

2/08

STATE	REFERENCE	LINE OF BUSINESS	SUMMARY OF PROVISIONS
WA (2/08)	§ 19.182.020	All lines	Consumer reporting agency may furnish credit report where the insurer intends to use it for underwriting.
	§ 19.182.040	Life	May use credit report in underwriting life insurance expected to amount to $50,000 or more.
	§ 48.18.545	Personal lines	Credit history may not be used to cancel or non-renew insurance. May only be used to deny coverage if combined with other substantive underwriting factors.
	§ 48.19.035	Personal lines	Credit history shall not be used to determine insurance rates unless the credit scoring models are filed with the commissioner. May not use certain attributes of credit history in credit scoring model.
	Reg. 284-24A-001 to 284-24A-065	Personal lines	Regulation describes standards that apply to insurers that use credit history.
WV (2/08)	§ 91-8-3	Auto	Dept. of Motor Vehicles may furnish credit information from its files where an insurer intends to use it for underwriting.
	Informational Letter No. 142A (August 2003)	Personal lines	Guidelines for filings containing credit scoring. Data may not be used in unfairly discriminatory manner. May not be sole basis for deciding whether to write coverage. If used for rating, must recheck scores of policyholders after 3 years.
	§ 33-6B-3	Auto	May not decline a policy based solely on adverse credit report.
	§ 33-17A-6	Property	May not decline a policy based solely on adverse credit report.
WI (2/08)	Bulletin dated 6/16/97	Personal auto and homeowners	Can use credit reports but not as the sole reason to refuse, cancel or nonrenew a policy.
WY (2/08)	§ 26-2-134	Personal lines, auto, homeowners	Authority to adopt regulation to provide that credit history may not be sole factor and to require disclosures. Protect consumers against unfair discrimination.

Appendix 2

The Use of Occupation and Education as Underwriting/Rating Factors for Private Passenger Automobile Insurance

March 2007

Report of commissioner, Kevin m. mccarty

Florida office of insurance regulation

The use of Occupation and Education as underwriting/rating factors for private passenger automobile insurance

March 2007

Executive summary

The Office of Insurance Regulation ("Office") held a public hearing on February 9, 2007 in Tallahassee to review the use of occupation and education as underwriting or rating factors for private passenger auto insurance and its potential impact on Floridians.

In Florida, as well as nationally, the insurance industry has had a checkered past in its use of race and other proxy factors that intentionally or unintentionally negatively impact minorities and low-income individuals. While the use of race as a rating factor was outlawed in Florida, the two factors mentioned above, occupation and education, have emerged in the rating and underwriting of auto insurance and appear to be highly correlated to race and income-level.

Under some rating plans, consumers with more professional occupations (doctors, lawyers, architects), and advanced college degrees are being offered preferred driver rates. Conversely, individuals with blue-collar jobs, and a high school education or less are paying higher premiums for similar risk factors, as exhibited by several online quotes for auto insurance requested by the Office from one of the major auto insurance writers in Florida. With all other factors remaining equal, except for changes to the online applicant's education and occupation, the results were startling. One online quote comparison demonstrated a significant difference in the quoted auto insurance rate when the two factors are adjusted, accounting in that instance in a 300% higher rate for the less educated and less skilled applicant.

Testimony at the public hearing on February 9, 2007, and documents received and reviewed prior, during and after the hearing reveal:

- ***There is a demonstrable correlation between occupation, education and income-level and ethnicity, which was not disputed by the insurance industry.***

- ***Insurance industry representatives all claim ignorance of the relationship between occupation, education and income-level and race despite the existence of publicly available U.S. Census Bureau Data***

- ***Insurers do not collect data from consumers on race or income-level, and refuse to study the impact of underwriting practices on minority and low-income consumers.***

- ***The insurance industry does not believe that corporate responsibility extends to ensuring its practices do not disparately impact minority or low-income Floridians; but instead maintains that it is the Florida Legislature's responsibility to define public policy on this matter in the insurance marketplace.***

- ***It appears that wealthier individuals are more likely to pay small claims out-of-pocket, and avoid making insurance claims, giving some occupations better loss ratios despite higher accident rates.***

- ***As measured by one company's use of occupation and education the magnitude of the premium difference can be very significant.***

- ***Companies that do not use occupation and education as rating factors may potentially be at a competitive disadvantage because they may lose the wide range of business offered by higher income policyholders. Foregoing whatever predictive value these factors may have might also put these companies at a disadvantage. Thus, from an economic point of view, this practice is likely to proliferate regardless of its negative effects on policyholders struggling to overcome disadvantages.***

- ***While the prohibition of the use of these factors, much like in the prohibition of the use of race, could lead to some economic inefficiencies in insurance markets, it may be beneficial to the overall economy and citizenry to prohibit use of these factors as a matter of public policy***

- ***At least one major auto insurer that currently uses education and occupation as part of its underwriting, asserts it would absolutely not use these factors if it were determined the factors had a disparate impact on protected classes.***

- ***A national insurance organization whose members write 56 percent of the private passenger auto insurance market in Florida stated that a public policy concern can override the use of these factors even if there is an actuarial basis for it.***

The transcript of the public hearing held on February 9, 2007, consisting of two volumes, is attached to this Report as **Exhibits 1 and 2**.

Background on the Use of Education & Occupation as Rating Factors

One of Florida's greatest strengths is its rich culture and ethnically diverse population. Regrettably, Florida has another history: one of slavery, Jim Crow laws, as well as discrimination that led to the modern civil rights era. This willful discrimination was pervasive and permeated the institutions of education, government, and commerce --- even the insurance industry. While Florida leaders have since prohibited the use of factors such as race in determining employment and housing decisions, some vestiges of discrimination remain.

In 2000, the National Association of Insurance Commissioners ("NAIC") initiated a Race-Based Premium Working Group to examine the use of race-based premiums for life insurance. The Office was an active participant in this endeavor, which included a questionnaire to all life insurance companies nationwide about past practices. This ultimately resulted in several multi-state market conduct examinations, and multi-million dollar settlements to correct past wrongdoing.

The review period varied based on the company, but usually encompassed 1900-1970, although many policies were still "on the books." The findings were disturbing. Historically several life insurance companies bifurcated rate tables for "Caucasian" and "not-Caucasian," charging higher rates for non-Caucasians. Company documents offered a very interesting defense for this policy: they claimed this was not discriminatory, but merely reflected the statistical differences between life expectancies for Caucasians versus non-Caucasians. Although there may have been some validity to this statement, the insurance industry does not exist in a moral, ethical, or historical vacuum. Despite this "actuarial justification," legislatures around the country banned the use of race regardless of the statistical reasoning.

In reaction to these changes, some companies adjusted their underwriting standards in an unexpected manner: they began to use other factors that served as proxies for race and income status. The two most notable factors included education and occupation.

According to one multi-state examination report concluded by Maryland[1], after the race question was deleted from the application in the 1960s, several companies "appeared to use occupation as a substitute for race." ***Occupations subject to substandard rating included maids, bootblacks, busboys, car wash workers, garbage or ash collectors and janitors.*** The multi-state reported noted, "Non-Caucasian workers were disproportionately represented in the [these] disadvantaged occupations."

The report further compared rating books before and after race was removed from the application and noted:

1) The rating books removed race from the rating methodology, and
2) Occupational Rating Classification replaced the use of race, and
3) No other changes were made.

Both the company and regulators agreed the company engaged in "socio-economic underwriting." All four states involved in the examination, Maryland, Florida, Pennsylvania and Virginia believed there was enough evidence to conclude that the use of occupation in this instance violated all four states' statutes regarding non-discriminatory practices.

In a similar examination conducted by the State of Ohio a rating book for Cooperative Life Insurance Company[2] (CLIC), not only was there ***a substandard rating for occupations like butlers, barbers, valets, cooks, elevator operators and waiters --- but the rating book warned against, "low-grade industrial or illiterate types."***

The Use of Occupation and Education as Rating Factors Continues

The presumption that the use of occupation and education as rating factors ended with the conclusion of the aforementioned life insurance industry multi-state examinations is erroneous.

[1] The State of Florida, Pennsylvania, and Virginia also joined this examination. Monumental Multi-State Exam Report # 789-00 (Maryland).
[2] Actuarial Report – Race Based Pricing Activities with Respect to the Life Insurance Business of Nationwide Life Insurance Company, July 6, 2004 – State of Ohio.

The venue, however, has changed --- to the underwriting and rating of private passenger auto policies.

On March 20, 2006, the Consumer Federation of America ("CFA") issued a press release warning that the nation's fourth largest auto insurer, GEICO, was using occupation and educational attainment to rate auto insurance policies, and that Liberty Mutual Insurance and Allstate Insurance were beginning to use these rating factors as well. J. Robert Hunter, Director of Insurance for CFA, and the former Insurance Commissioner for the State of Texas, challenged state insurance regulators to ban the use of education and occupation for rating policies as these factors are highly correlated with race and income level.

In response, The Property Casualty Insurers Association of America (PCI), a trade association that represents 1,000 member companies that write roughly 40% of the nation's property & casualty business issued its own press release on March 21, 2006. The PCI defended GEICO's use of education and occupation as "valid factors for insurers to use in the marketplace."

As early as 2004, the Office began taking active measures to have auto insurers remove the occupation and education variables from the insurers' underwriting/rating plans used in Florida. In 2004, as a condition of "approving" a filing, those auto insurers using either occupation or education, or both factors, in their underwriting plans were advised to cease doing so within 1 year.

In response to these measures taken by the Office, AIG, in a letter dated May 5, 2004, expressed that AIG "is amiable to remove this factor [occupation] from our scoring models contingent on the following conditions: The [Office] promulgate a Regulation that requires all personal automobile writers to stop using the occupation factors at the same time, or, all carriers using this factor have agreed to remove the factor within the same time frame."

While Florida law specifically outlaws the use of race for rating insurance policies, there is no specific statutory prohibition against using potential proxy factors that are highly correlated to

race, such as educational attainment and occupation that would create a disparate impact on racial minorities and low income Floridians.

Section 627.917, Florida Statutes, states that the Financial Services Commission can establish a uniform statewide risk classification reporting system for auto policies provided it does not discriminate based upon race, creed, color or national origin. Pursuant to this private passenger auto risk classification reporting system statute: "The classification system may include any difference among risks that can be demonstrated to have a probable effect upon losses or expenses …"

The insurers that have begun to use occupation and/or education as rating factors claim these factors are predictive of losses, and thus are not prohibited by Florida Statute, regardless of the potential impact. The auto rating statute states that rates are not unfairly discriminatory with respect to a group even though they are lower (and, by implication, higher) than rates for nonmembers of the group. Rates are only unfairly discriminatory if they clearly fail to reflect equitably the difference in expected losses and expenses or if they are not actuarially measurable and credible and sufficiently related to actual or expected loss and expense experience of the group to assure that nonmembers of the group are not unfairly discriminated against. It is this definition that governs the Office's determination of whether a rate is unfairly discriminatory.

The Public hearing on the use of occupation and education as rating factors for private passenger auto insurance

The Florida Insurance Commissioner, through a Notice of Hearing to the industry, as well as subpoenas directed to auto insurers currently using occupation and education as rating factors, compelled testimony from the industry, consumer advocacy groups, and from the public to explore this issue, and the rationalization underlying the use of these factors. Members from four insurance groups testified including GEICO, Liberty Mutual, the AIG Insurance Group, and New Jersey CURE Auto Insurance. In addition, members from insurance trade organizations including the Property and Casualty Insurance Association of America (PCI), the

Consumer Federation of America, the National Association of Mutual Insurance Companies (NAMIC), the Insurance Information Institute (III), the Florida Insurance Council, the Florida Justice Association, and Florida's Consumer Advocate also testified.

The issue is simple: allowing the use of occupation and education as rating factors appear to disproportionately favor non-minorities and higher-income individuals while negatively impacting minorities and low-income individuals by charging these groups, albeit somewhat indirectly, higher auto-insurance rates relative to others with similar risk characteristics.

Following the Office's attempts in 2004 to have automobile insurance carriers in the state remove the two factors, the Office began monitoring this trend, and has recently been very specific in not "approving" the rate filings that use the two factors at issue, but instead, warning companies that although the Office is concerned about the impact of these practices, it does not have statutory authority to deny these practices. While the Office has not "approved" these plans, it had no other recourse under current statutes and rules but to allow them to come into effect due to the deemer provisions of the law.

This issue also has gained national attention following the Consumer Federation of America's letter to all insurance commissioners explaining its research regarding GEICO's practices. In 2006, Commissioner McCarty commissioned an internal study of the correlation between education/occupation and ethnicity and income, which found strong correlations, ultimately concluding that logically any plan that utilized these factors would negatively impact minorities and low-income individuals.

Prior to the public hearing, the Office identified eight main investigatory questions to understand these issues:

1. Is there a correlation between occupation/education and race and/or income status?
2. Is the insurance industry aware of such correlation between occupation/education and race or income?
3. Does the insurance industry believe its corporate responsibility extends to ensuring its policies do not negatively impact people due to race or income-level?
4. Has the insurance industry researched the impact of its practices on Floridians as it relates to minority or low-income individuals?

5. Is there a correlation between occupation/education and loss ratios and or accident statistics?
6. If it is demonstrated the use of occupation and education negatively impact protected classes, what is the magnitude of this impact?
7. If the Florida Legislature does not change the laws, and this practice is allowed to proliferate, what will be the potential impact on the auto insurance industry?
8. If these factors were not allowed for underwriting factors, would the auto insurance industry still be competitive?

The Current use of occupation and education as rating factors

Even before the eight investigatory questions are explained, it is important to understand how the industry is currently using occupation and education. Although a few industry representatives stated broadly, "they have been using these factors for years," the current incarnation of the usage of these factors is a relatively new phenomenon, and is utilized in different forms by three auto insurers in Florida that collectively write approximately 17.1% of the auto insurance market in Florida, insuring over 1.9 million vehicles.

The testimony elicited the forms of current use, and revealed several critical facts. It is important to understand that these factors can be used in two different phases: (1) Underwriting --- which is to determine whether to insure the individual; and (2) Rating – which is to determine the actual premium paid by the customer. During this investigation, the Office learned about another practice, which is a blending of underwriting and rating, the practice of "tiering"

GEICO utilized "tiering" most directly, and this report will use this company's experience as an example. Currently GEICO has four companies that operate in the State of Florida: Government Employees Insurance Company (which is the origin of the name "GEICO" but does not technically incorporate that acronym), GEICO General, GEICO Indemnity, and GEICO Casualty. During the underwriting phase, a customer will apply for coverage on-line or via a telephone operator, and believes they are applying for coverage from "GEICO." Based on the underwriting criteria (including occupation and education), customers are placed into different companies. The preferred-risk customers are placed into Government Employees

Insurance Company or GEICO General (with the lowest rates), the intermediate-risk customers are placed into GEICO Indemnity, while the sub-standard risk customers are placed into GEICO Casualty. Based on GEICO's placement statistics, it appears that customers gaining the preferred status (and lowest premiums) are far more common:

GEICO Coverage in Florida, 2006

Company	# of Insured Vehicles	Avg. Annual Premium
GEICO /GEICO General	990,262	$938.70
GEICO Indemnity	174,823	$1,183.70
GEICO Casualty	110,613	$1,474,90

It also appears that GEICO is not equally receptive to all segments of the population (favoring those with higher education and better occupational status). During the testimony, the Office learned that customers are usually not informed they were rejected for the preferred company (Government Employees Insurance Company or GEICO General), and placed into another company.[3]

Liberty Mutual has two companies writing auto insurance in Florida, Liberty Mutual Insurance Co. (the preferred company with lower rates), and Liberty Insurance Co. (sub-standard risks and higher rates). In the initial determination, occupation, employment status, and education are determinants for being offered coverage from Liberty Mutual Ins. Co. In response to direct questioning during the public hearing, Christopher Cunniff, VP of Personal Marketing, stated, "Yes, it is possible that some small segment of customers, the use of that variable [education and occupation] does push their slotting decision from one company to another."[4] However, once in the insurance companies, education and occupation are not used as rating factors by the

[3] GEICO is currently defending itself against a lawsuit filed in 2006 in federal court by several African-Americans who were either former or current GEICO policyholders, alleging that the use of education and occupation factors are discriminatory or have a discriminatory impact, Patricia Amos, et al. v. GEICO, U.S. District Court for the District of Minnesota, Case # 06-cv-1281. Transcript of public hearing, Volume 1, page 81, lines 2 – 14; Vol. 1, page 88, lines 8 – 13. GEICO states the allegations are "absolutely baseless".

[4] Transcript of public hearing, Volume 1, page 97, lines 14 – 17.

Liberty Mutual Companies. This contrasts with GEICO, where further tiering decisions are made within each company.

One potential problem of this "slotting" technique is that individuals may be "parked" in the substandard risk company. Even if a person achieves a higher level of education, or changes to a more preferred occupation, they can only switch companies after three years, "if they are clean," remarked VP Cunniff.[5]

The American International Group, Inc. ("AIG") Companies use occupation, but do not use education in their underwriting and premium practices. While AIG does have three auto insurers writing in Florida, AIG does not use the same type of "tiering" techniques used by GEICO and Liberty Mutual, but places customers based on their distribution channels. However, within their underwriting tiers (which ultimately affects rating and premiums), occupation is used as a determining factor.

The Office is vested with the responsibility to ensure rates are not "excessive, inadequate, or unfairly discriminatory,"[6] and it appears that these underwriting and rating factors will *prima facie* result in higher premiums for those who can least afford it: lower-income, and less educated individuals.

I. Is there a correlation between these factors and race and/or income status?

Although racial differences between education and occupation have narrowed since the "Jim Crow" period examined during the race-based life insurance premiums initiative --- a wide gap still exists.

The U.S. Census Bureau conducted a comprehensive study of race/ethnicity and occupation in for its *Selected Occupational Groups by Race and Hispanic Origin for the United States, 2000*.

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[5] Vol. 1, page 97, lines 23 – 25.
[6] Section 627.0651, Florida Statutes.

The table below, based on U.S. Census Bureau Data, shows disparities among the types of jobs by different races & ethnicities:

Category	Management, Professional, & Related Occupations
Caucasian & Asian*	37%
Black/African American	25%
Hispanic or Latino**	18%
American Indians, Native Alaskans, Hawaiians, & Pacific Islanders	24%

* *Non-Hispanic*
** *Any Race*

Although this is national data, we can still observe dramatic differences: Caucasians and Asians are twice as likely as Hispanics to have management or professional jobs.

The chart below, based on data from he U.S. Census Bureau, shows educational attainment also has large disparities across ethnic and racial groups in Florida:

Bachelor's Degree or Higher
Florida, 2005

Category	Percent with Degrees
Caucasian & Asian*	29%
Black/African American*	13%
Hispanic or Latino**	21%

* *Non-Hispanic*
** *Any Race*

Source: U.S. Census Bureau: Educational Attainment of the Population 18 Years and Over, by Age, Sex, Race Alone, and Hispanic Origin, for the 25 Largest States: 2005

Unlike the occupational data, this is Florida specific data, and also shows large disparities: Caucasian and Asian non-Hispanics are more than twice as likely to have a college degree as Blacks/African Americans.

For both occupation and education, as a group, Caucasians and Asians are more likely to have professional and managerial jobs, as well as college degrees. Not only would utilizing these factors negatively impact minorities (as a group), but also using a combination of these factors may magnify the "inequality effect."

II. Is the insurance industry aware of such correlation between occupation/education and race or income?

Although one may think it is "common knowledge," that there are inequalities in America that contribute to minorities being less likely to obtain college degrees, or have higher incomes, shockingly the representatives of the insurance industry claim to be oblivious of such a relationship. In fact, at times the public hearing was reminiscent of hearings involving the tobacco industry where tobacco lobbyists claimed there were no studies proving tobacco use caused cancer.

Asked pointedly by Commissioner McCarty whether the use of occupation and education would disparately impact protected classes of minorities, Hank Nayden, VP and General Counsel for the GEICO group answered, "…to our knowledge, there is no credible data and no credible study reflecting that."[7] Later in the testimony, Commissioner McCarty asked the same witness if he has looked at the U.S. Census Bureau data on this relationship between occupation and race, Mr. Nayden conceded, "I have not."[8]

The Commissioner again emphasized this question with representatives testifying on behalf of Liberty Mutual. Asking whether the company had looked at U.S. Census Bureau data regarding the relationship between occupation, education, and race and/or income, Christopher Cunniff, VP of Liberty Mutual's Personal Marketing admitted, "I have not, and I'm not aware of anyone at Liberty who has."[9]

Similarly, during the questioning of AIG company representatives, when asked by Deputy Commissioner Belinda Miller about studies showing relationships between occupation and income or race, Mr. Fedak VP of AIG Direct's Southeast Region, answered, "I'm not aware of any studies, other than analyzing our own book of business."[10] Further questioning revealed

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[7] Vol. 1, page 38, lines 7 - 10.
[8] Vol. 1, page 50, line 24.
[9] Vol. 1, page 101, lines 23 – 24.
[10] Vol. 2, pages 160 – 11, lines 25 and 1.

that since AIG does not collect data regarding ethnicity or income, no such relationship studies could be performed based on their book of business.

The industry's denial of knowing about the statistical correlations between education, occupation and race and/or income strained credulity, Steve Parton, General Counsel for the Office asked rhetorically whether this was "willful blindness" by the industry. However, it should be noted that CFO Eric Poe of New Jersey CURE Auto Insurance Company committed to not using this factors stated:

> ***"…for an entire industry that is predicated on how smart we are, we would be probably the dumbest industry in the world not to know that those statistical correlations exist."***[11]

III. Does the insurance industry believe its corporate responsibility extends to ensuring its policies do not negatively impact people due to race or income-level?

Based on the testimony presented February 9, 2007, the simple answer appears to be "no."

During his testimony at the public hearing, Alex Hageli of the Property & Casualty Insurance Association of America (PCI) stressed that as long as the outcomes are actuarially based, the insurance company should be allowed to use it. Moreover, when asked about disparities in outcomes and whether that should be allowed he stated, "I believe that's a question the Legislature needs to address."[12]

When asked to contemplate hypothetical variables like eye color, cell phone usage, the number of plasma TVs in the household or birth order, Mr. Hageli answered plaintively, "If there's an actuarial basis for it, it should be used unless there is some overriding public policy concern"[13]

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[11] Vol. 1, page 33, lines 14 – 17.
[12] Vol. 2, page 128, lines 15 –18.
[13] Vol. 2, page 135, lines 17 – 21.

Later when asked pointedly about the use of race in rating life insurance (as it was conceded African-American's have lower life expectancies than Caucasians), Mr. Hageli implied it could be used, "Except for the fact that it's prohibited by law."[14]

Other industry representatives did not go this far. Commissioner McCarty asked GEICO representatives, "If, in fact, it were determined, hypothetically, that it [using occupation and education as rating factors] had a disparate impact on protected classes, would GEICO continue to use it?"[15] Mr. Nayden of GEICO responded, "absolutely not."[16] However, after presented with U.S. Census data showing disparities, Mr. Nayden seemed unconvinced of the relationship: "And to our knowledge, there is no credible data and no credible study reflecting that [disparate impact]."[17]

When Commissioner McCarty asked the same question of Liberty Mutual's representatives: "If education and occupation criteria used in underwriting or rating were shown to have a disparate impact on protected classes of people …would your company continue to use it?"[18] Mr. Cunniff of Liberty Mutual waffled: "Well that's a hypothetical question which I can't answer, and certainly we wouldn't comment in advance on business plans with our company."[19]

While they too did not specifically state it is the companies' responsibility to understand these relationships, the AIG companies were less vociferous in defense of this practice. Mr. John Fedak, VP of AIG Direct's Southeast Region summarized their companies' position: "…if the OIR requires insurance carriers to remove occupation from the rating process, our tiering model will be revised and will become less accurate in predicting losses."[20]

In summary, the industry does not seem to believe that it is within their corporate responsibility to ensure that rating and underwriting practices do not negatively impact society, as long as the

[14] Vol. 2, page 141, lines 13 – 14.
[15] Vol. 1, page 37, lines 20 – 23.
[16] Vol. 1, page 37, line 24.
[17] Vol. 1, page 38, lines 7 – 8.
[18] Vol. 1, page 101, lines 3 – 8.
[19] Vol. 1, page 101, lines 9 – 12.
[20] Vol. 2, page 155, lines 1 – 4.

practices have actuarial justification. Instead, it is the perception of the industry that this is a public policy question, and it is the responsibility of the Florida Legislature and regulators --- not the insurance industry to ensure these practices do not negatively impact society.

IV. Has the insurance industry researched the impact of its practices on Floridians as it relates to minority or low-income individuals?

The insurance industry professes ignorance as to the relationship between occupation, education and income-status or race, and believes it is the Florida Legislature's responsibility, not that of the industry, to determine what factors are inappropriate. Given these facts, it should not be surprising the industry has not researched this question. It has not.

Yet what is surprising is the industry has established a mechanism that makes it impossible for any auditor to research this specific information by intentionally never collecting any relevant data. While the industry portrays this as the moral high road because policyholders may be offended by being asked information about income or race, it uses the resulting ignorance to claim that anything it may do cannot possibly be discriminatory because it does not even have race or income information. The argument confuses intent with results but sounds appealing at first.

The State of Florida application for employment asks the ethnicity and age of the applicant on a voluntary basis for information purposes (to ensure non-discrimination), while mortgage companies and credit card companies routinely request income information. Insurers make hyperbolic statements such as, "No study has shown our policies have a disparate impact". Such statements are true by tautology --- no study can be conducted without the information of the race and income level of the applicant.

This opinion was most passionately advocated by Mr. Nayden of GEICO who stated, "There is no study that finds that the use of education or occupation as a risk selection characteristic has

an adverse impact on minorities or low income individuals."[21] Yet, when asked whether GEICO could collect and/or analyze this data to determine potentially negative impacts, Mr. Nayden responded emphatically, "We have no interest in collecting or analyzing any data on race."[22] This comment was echoed by Mr. Cunniff of Liberty Mutual: "Liberty does not ask or measure or track either income or race, so we have no internal studies …"[23] We may observe that no external studies are possible either, given that the entities in control of the information desire to remain blissfully ignorant.

To demonstrate the nexus between occupation groups and income level, Eric Poe of the CURE New Jersey Auto Insurance showed that GEICO's rating manual offered the worst (highest premium) category for military personnel in Pay Grade E-4 or lower, which equates to someone earning less than $24,000 a year.[24] Based on GEICO's 2004 rating manual filed with the Office of Insurance Regulation – this is correct.

In response Mr. Nayden remarked the Office has "an old underwriting guideline," but the newer guidelines do not use military pay grades.[25] However, upon further questioning by Susan Dawson, Assistant General Counsel with the Office, Mr. Nayden admitted GEICO currently uses military rank, which is highly correlated to income level within the military.[26]

The industry's position is that using education and/or occupation is "blind" based on race or income. Yet, without collecting any data on this issue, the impact itself must remain invisible. Some of the occupations in GEICO's preferred auto group include doctors, lawyers, and engineers while those in the lowest rating categories include blue and gray-collar workers, service and long-haulers, it is difficult to fathom how their policies could not produce a negative impact on disadvantaged groups.

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[21] Vol. 1, page 46, lines 5- 8.
[22] Vol. 1, page 38, lines 20 – 22.
[23] Vol. 1, page 113, lines 17 – 21.
[24] Vol. 1, page 22, lines 9 – 23.
[25] Vol. 1, pages 41 - 42.
[26] Vol. 1, page, 42, lines 22 – 25, and page 43.

While the Office agreed that collecting information about race and income could be perceived as offensive, minorities and low-income individuals may be equally offended to learn much larger proportions of them are paying higher rates than the majority racial group and higher income white-collar professionals, and are being rejected by the preferred companies within an insurance group without their knowledge.

V. Is there a correlation between occupation/education and loss ratios and or accident statistics?

Underlying the industry's entire argument is a statistical correlation between occupation, education and auto loss ratios. Representatives from AIG were even more specific, in that by using multivariate regression analysis, there is an *independent* relationship between occupation and auto loss ratios, which can be demonstrated when other factors are held constant. Regrettably, these data cannot be reviewed in this report as some of this involves proprietary information.

During the public hearing, Attorney Susan Dawson elicited testimony from representatives from GEICO regarding a 2003 study completed by Quality Planning Corporation, a division of Insurance Services Office, Inc. (ISO). This study showed that several white-collar careers had higher risk for an accident:

2004 Quality Planning Corporation Study
Accidents Per 1,000 Per Year

Rank	Occupation	Accidents per 1,000
# 1	Student	152
# 2	Medical Doctor	109
# 3	Attorney	106
# 4	Architect	105
# 5	Real Estate Broker	102
# 6	Enlisted Military	99
# 7	Social Worker	98
# 8	Manual Laborer	96
# 9	Analyst	95
# 10	Engineer	94

Many of these occupations including medical doctor, attorney, architect, and engineer appear in GEICO's most preferred rating class.

When asked to explain this apparent discrepancy, Mr. Hageli of PCI speculated that certain jobs may require travel at unusual hours, or be subject to greater distractions (including cell phone usage) causing a greater risk of accident.[27] When pressed for an example, he gave a real estate broker. Yet, Mr. Hageli's explanation seemed unconvincing, as high cell phone usage by attorneys, doctors, and real estate brokers should make their premiums higher --- not lower.

A better explanation was presented by Eric Poe of New Jersey CURE Auto Insurance who stated, "Studies have shown up to 50 percent of eligible claims are not even reported to insurance companies because of the fear that their rates will go up. Unfortunately, lower income individuals do not have the ability to make that choice."[28] For evidence, Mr. Poe cited a report by the 1998 Joint Economic Committee from the U.S. Congress.

Paul Lavrey, actuary for GEICO, agreed stating that "our experience would be based on what we know about, which is the losses that are reported." Moreover, "I'm sure some claims aren't

[27] Vol. 2, page 126, lines 21 – 25.
[28] Vol. 1, page 14, lines 7 – 9.

reported and we don't know about them so we wouldn't have that."[29] Regarding the number of claims that are not reported Mr. Nayden added, "We're not aware of a study, but we would certainly like to review it, if you have one."[30] Mr. Cunniff, of Liberty Mutual, did try to offer a better defense of this stating that many auto claims are third party claims that would be difficult to nonreport, moreover, there are some legal requirements that require multi-car accidents to be reported.[31]

Yet the end result is the same, assuming both the industry studies showing preferred white-collar jobs like doctors, lawyers and architects, have lower loss ratios, yet according to Quality Planning's study have greater amounts of car accidents, it does appear there is some "self-insurance." Basically, wealthier consumers are paying lower-amount claims out-of-pocket rather than filing claims.

VI. If it is demonstrated that the use of occupation and education negatively impact protected classes, what is the magnitude of this impact?

Another factor is the amount of the effect. Even assuming occupation and education are accurate predictors of auto loss ratios, and that industry data has roughly similar experience in this regard, it does seem odd that the variations among insurers are of such a significant magnitude, especially given its actuarial basis.

AIG Company representatives (which use only occupation, not education) assert the differences are not significant: "There's a potential in certain extreme circumstances for a person's tier that they're assigned to move by two tiers based on the occupation variables, and that would result in approximately a 30 percent rate difference."[32] When asked specifically whether it could be higher, Mr. Fedak stated, "That would be a maximum."[33]

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[29] Vol. 1, page 77, lines, 16 – 22.
[30] Vol. 1, page 78, lines 8 – 12.
[31] Vol. 1, page 109, lines 11 – 20.
[32] Vol. 2, page 168, Mr. Bowman's testimony.
[33] Vol. 2, page 168, line 6.

While the Liberty Mutual testimony focused on other areas, the GEICO testimony elucidated several interesting numbers regarding differences in occupation, education, and its affect on premiums. One of the reasons GEICO is easy to analyze is that it has an interactive rate estimator on its website which can be used to see the effect of specific occupations and education levels while holding other demographic information constant. The Office of Insurance Regulation presented three comparisons:

	High School/ Blue-Collar	Advanced Degree/ Professional	% Difference
Comparison 1[34]	$4,225.36	$1,403.59	201%
Comparison 2[35]	$884.84	$714.04	24%
Comparison 3[36]	$1,027.29	$1,280.79	25%

Eric Poe of New Jersey CURE Auto Insurance stated the differences varied by as much as 50-70%, although in some cases the difference could be as much as 200% as in Commissioner McCarty's example.[37]

While GEICO representatives seem to imply these were isolated incidents, interestingly a reporter from the St. Petersburg Times conducted his own research on his vehicle, comparing the rates for "Bob" --- a 50 year-old janitor with no high school education, and "Joe" a Ph.D. computer executive attempting to insure the same 2002 Toyota Camry in the Tampa area.[38] His results: Bob the janitor would be pay premiums 66% higher for the exact same vehicle.

[34] Example included a single male, age 23, living in Hialeah, with a 2000 Chevrolet Malibu LS, 4 door sedan, Drives up to 15,000 miles a year, one speeding ticket, no accidents within 3 years. BI limits $15,000/$30,000; PD $10,000; PIP $10,000 with $250 deductible; UM: $15,000/$30,000; non-stacked, Comprehensive $500 deductible, Collision $500 deductible. Six-month policy.

[35] Example included a single male, age 25, living in Jacksonville, with a 2005 Honda Accord, 4-door sedan, Drives up to 15,000 miles a year, one speeding ticket, no accidents within 5 years. BI limits $25,000/$50,000; PD $25,000; PIP $10,000 with $0 deductible; UM: $25,000/$50,000; non-stacked, Comprehensive $500 deductible, Collision $500 deductible. Six-month policy.

[36] Example included a single male, age 24, living in West Palm Beach, with a 2002 Buick Park Avenue, 4-door sedan, Drives up to 15,000 miles a year, one speeding ticket, no accidents within 3 years. BI limits $15,000/$30,000; PD $10,000; PIP $10,000 with $250 deductible; UM: $15,000/$30,000; non-stacked, Comprehensive $500 deductible, Collision $500 deductible. Six-month policy.

[37] Vol. 1, page 12, lines 7 – 11.

[38] "GEICO Gives Different Rates for Drivers Depending on their Jobs," St. Petersburg Times, Robert Trigaux, February 12, 2007.

While GEICO claims their models incorporate up to 27 factors, it does appear that some factors are given greater weight than others --- and that education and occupation factors may be more important than miles driven, marital status or age in calculating an insurance premium.

VII. If the Florida Legislature does not change the laws, and this practice is allowed to proliferate, what will be the potential impact on the auto insurance industry?

The problem is simple: if occupation and education are truly predictors of loss, the companies that do not adopt these practices are at a competitive disadvantage vis-à-vis insurance companies that do adopt this practice.

The most pervasive use of this practice is currently that of GEICO, which is the third largest private passenger auto writer in Florida, and the fourth largest writer in the United States.[39] In a statement to the Commissioner and the panel, Mr. Cunniff of Liberty Mutual observed, "I would say that as a general rule we are aware of what competitors are doing."[40]

In their defense, Mr. Nayden of GEICO used as evidence GEICO's double-digit growth and that "the company's growth across all occupations and educational levels give the lie to any notion that certain individuals are being harmed by our underwriting practices."[41] The fact that nearly 1 million policyholders are in GEICO's preferred company, while less than 300,000 have policies with the substandard companies casts serious doubt on this assumption --- while all companies may be growing, GEICO companies appealing to those with higher occupation and more professional occupations seem to have achieved greater market penetration.

In his testimony, Eric Poe stated about CURE New Jersey Auto, "…we [the insurance community & state government] have to make moves to ban the use of this or we are going to be compelled to adopt this rating practice."[42] The Consumer Federation of America voiced its agreement, "…GEICO's continued use of the education and occupation criteria will lead to negative competition in the insurance marketplace and that it will encourage GEICO's

[39] Vol. 1, page 35, lines 15 – 17.
[40] Vol. 1, page 119, lines 23 – 25.
[41] Vol. 1, page 48, lines 9 – 15.
[42] Vol. 1, page 10, lines 7 – 18.

competitors to follow suit, because those competitors will see that GEICO is taking away their more affluent clients."[43]

Based on the testimony provided, it would appear that auto insurer's use of these factors is poised to increase. These factors, could lead proliferate within the auto insurance industry, in much the same way that the use of race as an underwriting factor became pervasive throughout the life insurance industry between 1900 to 1970.

VIII. If these factors were not allowed for underwriting factors, would the auto insurance industry still be competitive?

Other than having predictive value, the main argument for the inclusion of education and occupation as rating factors is the concept of competition. Perhaps best articulated by Dr. Robert Hartwig of the Insurance Information Institute, "…a system of rates that accurately reflects risk and costs is fair and it is equitable. States that restrict actuarially valid underwriting criteria implicitly subsidized drivers with relatively poor records at the expense of the state's better drivers."[44]

Even more dramatically, representatives from PCI stated this will lead to overall price increases: "When you have less competition, you have less market forces forcing prices down," Mr. Hageli continued, "If you begin, as regulators, to tell them what they can and cannot do, they're going to be more conservative. I mean that to me seems to be pretty commonsensical."[45] NAMIC also agreed, "… limitations and restrictions on underwriting freedom stifle innovation and thereby hamper competition, ultimately harming consumers and society in general."[46]

These arguments do have some merit. However, this can be applied to all types of regulation --- as regulation, whether it be standardizing forms that people can understand, prohibiting use

[43] Vol 2, page 149, lines 7 – 12.
[44] Vol. 2, page 193.
[45] Vol. 2, page 131, lines 14 – 20.
[46] Vol. 2, page 185, lines 4 – 14.

of specific language in advertising, or creating solvency requirements to ensure against bankruptcy --- all regulation implicitly limits freedom of insurance companies in exchange for a perceived societal benefit.

The one statement that remained unanswered was posed by the Insurance Commissioner Kevin McCarty during the testimony of PCI: "Certainly the life insurance business is as robust today as it's ever been and we don't allow race-based rates."[47] Moreover, in the same vein, disallowing the use of a factor by all companies (in this instance race) creates a level playing-field for all insurance companies to compete based on factors that are allowed. Based on information received as part of the Office's investigation of this matter, companies that use the factors view the college-educated population as a more profitable group. Companies that do not use occupation and education as rating factors may potentially be at a competitive disadvantage because they may lose the wide range of business offered by higher income policyholders.

[47] Vol. 2, page 131, lines 8 – 13.

Florida's Office of Consumer Advocate also agrees, "I believe that if a particular rating variable has an extraordinary disparate impact on a particular prohibited class or group of prohibited classes, that that variable in effect is a proxy for prohibited classes and should be prohibited."[48] Thus, even though some inefficiencies in the auto insurance market may be created by disallowing the use of factors such as race, income level, or factors that may be intentional or unintentional proxies for race and income levels such as credit scores, occupation and education --- the prohibition of such use may be in the public interest, despite modest insurance sector inefficiencies. The relationship between race and income is illustrated by data from the U.S. Census' "Income, Earnings, and Poverty From the 2004 American Community Survey," issued August 2005:

Median Incomes by Race

Race and Hispanic Origin	Men	Women
Caucasian alone	$42,707	$32,034
Caucasian alone, not Hispanic	$45,573	$32,678
African-American alone	$32,686	$28,581
American Indian	$32,113	$25,752
Asian alone	$46,888	$36,137
Hawaiian and Pacific Islander	$32,403	$27,989
Other Race	$26,679	$23,565
Two or More Races	$37,025	$30,729
Hispanic Any Race	$26,749	$24,030

Median Incomes by Education

Education	Men	Women
Less than High School	$21,760	$13,280
High School Graduate	$31,183	$19,821
Some College or Associates Degree	$37,883	$25,235
Bachelor's Degree	$52,242	$35,195
Graduate or Professional Degree	$68,239	$46.004

[48] Vol. 2, page 217, lines 16 – 21.

Median Incomes by Occupation

Occupational Fields	Men	Women
Management	$65,393	$48,118
Business and Financial Operations	$57,922	$42,256
Computers and Math	$66,130	$56,585
Architecture	$64,496	$51,581
Health Care Practitioner	$69,124	$45,380
Health Care Support	$25,774	$22,658
Farming, Fishing	$22,124	$17,098
Construction	$33,064	$29,289
Transportation	$31,840	$22,434
Personal Care and Service	$27,258	$19,789
Educational	$47,963	$36,891
Office and Admin Support	$35,216	$29,006

One of Florida's greatest strengths is its rich culture and ethnically diverse population, and it would be unfortunate if the insurance industry, through its practices, either intentionally or unintentionally, engaged in discriminatory practices based on a person's ethnicity or income status. Similar to credit scoring, it is possible that clear legislation with rule making authority will be needed to restrict the use of education and occupation as underwriting and rating factors.

NAIC White Paper

THE U.S. NATIONAL STATE-BASED SYSTEM OF INSURANCE FINANCIAL REGULATION

and the

SOLVENCY MODERNIZATION INITIATIVE

August 14, 2013

Drafted by the
Solvency Modernization Initiative (E) Task Force

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SECTION:

Section 1: Introduction

1. In 2008, through the NAIC, state insurance regulators in the U.S. embarked on the Solvency Modernization Initiative (SMI) to perform a critical self-evaluation to improve the insurance solvency regulatory framework in the U.S., including a review of international developments and potential options for use in U.S. insurance supervision. The SMI focuses on the following key components of the solvency framework: capital requirements, governance and risk management, group supervision, statutory accounting and financial reporting, and reinsurance. The purpose of this white paper is to explain the U.S. solvency regulatory framework and how and why it works successfully. In addition, the white paper will discuss the SMI self-evaluation and highlight the strengths of the national state-based system of insurance regulation and the improvements made over the last several years in the SMI.

Implementation of the U.S. Financial Regulatory Mission

2. U.S. regulators adopted the following U.S. Insurance Regulatory Mission at the NAIC: *Protect the interests of the policyholder and those who rely on the insurance coverage provided to the policyholder first and foremost, while also facilitating the financial stability and reliability of insurance institutions for an effective and efficient marketplace for insurance products.*[1] Considering the variety of ways to implement all of the aspects of a regulatory regime, U.S. regulators decided that combining both financial and market regulation is the best means to achieve their regulatory mission.

Financial Regulation

3. The SMI project first produced a succinct description of the entire current U.S. financial regulatory framework, including the underlying principles in which U.S. regulators operate, titled, "The United States Insurance Financial Solvency Framework[2]" (hereafter called "Framework"). The financial regulatory process is essentially a three-stage process: 1) mitigate or eliminate some risks in the insurance business through guardrails around or restrictions on insurers' activities; 2) use financial tools and oversight to work with insurers to implement corrective actions in order to avoid failures; and 3) provide a back-stop of financial protection in the event that insurer rehabilitation or liquidation is required.

4. Stage one uses legal restrictions or regulatory approval requirements on significant, broad-based transactions/activities to mitigate or eliminate certain risk exposures at the outset. For example, the licensing application process requires extensive analysis of potential financial failure or marketplace illegal or improper risks. Not all requests to conduct insurance business are granted; thereby protecting policyholders by avoiding unacceptable risks. Insurers must obtain approval for extraordinary dividends before payment, thereby avoiding inappropriate investor payments or distributions. Other examples of pre-approval requirements include change of control, transactions with affiliates, investments, and some reinsurance transactions.

5. The second stage, and where most of the regulatory activity exists, is financial oversight. Financial oversight and the determination of hazardous financial condition are the most valuable and extensive part of U.S. insurance financial regulation. Regulators evaluate companies to determine if they are in

[1] Modified from "The United States Insurance Financial Solvency Framework," NAIC Financial Condition (E) Committee, 2010.
[2] *www.naic.org/documents/committees_e_us_solvency_framework.pdf.*

potentially hazardous financial condition, using financial analysis and financial examination tools based on an extensive and uniform financial reporting system along with correspondence with the insurer and other relevant entities (as may be necessary). Uniform and detailed reporting allows regulators to benchmark one company to other comparable companies, identifying outliers, unique situations, and potentially under-valued risks. These financial oversight activities also allow regulators to look for new risk concentrations and/or optimistically-valued risks in order to prioritize companies and catch issues long before they become apparent in the marketplace. Notably, the system maintains confidentiality of the financial analysis calculations so companies cannot "game" the reporting to achieve certain desired outcomes. In this way, regulators try not to place too much reliance on the "over-optimism" that might exist in a company's own measurement of regulatory capital needs. Due to the significance of financial reporting in the U.S. financial regulatory system, regulators focus considerable activity and oversight on consistent appropriate reporting (audits, compliance, actuarial opinions, etc.).

6. The final stage, and probably the most difficult stage of regulatory oversight, occurs when an insurer becomes insolvent or financially impaired, either in receivership[3] (conservation[4], rehabilitation[5], etc.) or liquidation[6]. Most often, regulators cite hazardous financial condition[7] as the basis for regulatory action. While one might expect the piercing of the required regulatory capital level (called Risk-Based Capital, or RBC) to be the most-often-cited finding prompting regulatory action, most regulators take action before companies fall below the required RBC levels. In the U.S., regulators do not use RBC as an insolvency predictor in isolation; but rather, they rely upon other significant financial indicators and analysis. Besides enhancing uniformity in regulatory action, the value of the RBC comes as back-stop protection. RBC provides the legal authority for regulatory action — a final line whereby regulators are required to take action with limited court intervention. Because of this automatic nature and mandatory regulatory action requirements, RBC action and control levels must be accurate as measures of truly weakly capitalized companies to avoid inappropriate, yet mandatory, action.

7. As a final measure of protection, the state-created insurance guaranty funds provide policyholder protection in the event of insolvency. Guaranty association member-insurers provide coverage to the policyholders of an insolvency insurer; however, not all claims are covered in full but to the limits of

[3] Receivership actions include three different types of judicial proceedings—conservation, rehabilitation, and liquidation—which may be ordered by the Court to resolve problems with insurance companies not in compliance with state financial statutes. The state's chief insurance regulator petitions the Court for the appropriate form of receivership. Receivership proceedings are usually commenced against insolvent or financially impaired insurers in the insurer's domiciliary state (the state in which the insurer is incorporated) and in specific courts within that state. Each state requires that the chief insurance regulator of the insurer's domiciliary state be appointed receiver of the insurer to administer the receivership under court supervision. (GRID FAQs: *https://i-site.naic.org/grid/gridPA.jsp*)

[4] In some states, a court may enter an order of conservation upon the petition of a regulator. An order of conservation is designed to safeguard the assets of the insurance company and give the regulator an opportunity to determine the course of action that should be taken with respect to the insurer. In some of the states, a court-ordered conservation may be confidential. (GRID FAQs: *https://i-site.naic.org/grid/gridPA.jsp*).

[5] The chief insurance regulator may petition a state court for an order of rehabilitation as a mechanism to remedy an insurer's problems, to protect its assets, to run off its liabilities to avoid liquidation, or to prepare the insurer for liquidation. (GRID FAQs: *https://i-site.naic.org/grid/gridPA.jsp*)

[6] In liquidation, the receiver/liquidator must identify creditors and marshal and distribute assets in accordance with statutory priorities and dissolve the insurer. In most states, the insurer must be insolvent to be placed in liquidation. (GRID FAQs: *https://i-site.naic.org/grid/gridPA.jsp*)

[7] Hazardous financial condition is cited within the authority of the state law based on the NAIC *Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in Hazardous Financial Condition* (#325).

coverage and types of policies specified in state law. By design and in an effort to cover the most vulnerable, guaranty funds generally do not pay high limits of coverage.

Market Regulation

8. Market regulation consists broadly of analysis and oversight of insurers' behavior in the market including treatment of policyholders and claimants in product development and pricing, competition, statistical reporting, administration of residual markets, licensing of insurance producers, and consumer assistance and information services. Because problems arising from market activities can increase risks to solvency, regulators balance market regulation and financial regulation activities to achieve our financial regulatory mission, including consideration of availability and affordability of insurance coverage and market competition. Effective communication between financial and market regulators is integral to the analysis process. Market regulators employ a variety of oversight techniques ranging from analysis conducted within the various departments of insurance to on-site examinations. Such techniques as data analysis, correspondence, interviews and interrogatories or questionnaires are also used.

Future of Financial Regulation

9. In the late 1980s and early1990s, state insurance regulators, through the NAIC, developed a uniform solvency system, introducing "risk-focused" processes into the supervisory system and creating the RBC tool to replace fixed capital requirements that did not vary by company size or risk exposure. U.S. regulators have made continuous improvements to our financial regulatory system over the past two decades, with many enhancements such as the model audit rule, risk-focused financial analysis and examination, and uniform statutory accounting practices and procedures. Today, the enhanced risk-focused surveillance process implemented across the states focuses on the insurer risks, the mitigation of those risks and on prospective risk analysis. In this way, U.S. regulators have developed and implemented a financial regulatory system based extensively on financial review and analysis, risk management, and corporate governance.

10. Extensive peer review is an essential element of the U.S. financial regulatory system. Communication and collaborative efforts among the states and through the NAIC have evolved over time and continue to progress each year. State regulators follow NAIC processes for discussions of financial regulatory issues and make changes every year to statutory accounting requirements, risk-based capital, financial rules, regulatory guidance, etc. Nonetheless, we have not conducted a comprehensive evaluation of our regulatory Framework since the early 1990s. Broadly speaking, the U.S. financial regulatory system meets the needs of U.S. regulators in achieving their regulatory mission, but, no regulatory system should remain stagnant and every regulatory regime should continuously evaluate its system in light of new industry issues, market conditions and regulatory developments.

11. Today, even though the U.S. insurance regulatory system proved successful through difficult financial markets in 2008-09, regulators can learn from the financial crisis (e.g., the need for improved group supervision) and international developments (e.g., the G-20 agreement for the International Monetary Fund's (IMF) Financial Sector Assessment Program (FSAP)). Accordingly, a comprehensive evaluation of the U.S. Financial Regulatory Framework is appropriate. Regulators implemented the SMI project to evaluate and report on regulatory areas in need of modification and supplementation and to offer methods for implementation of those changes.

12. As one step in SMI, regulators evaluated the success of the regulatory system. Opinions vary on an appropriate definition for "regulatory success," but, first and foremost, in the U.S. and around the world, there is agreement that a regulator's main priority is to protect policyholders and those who rely on insurance coverage. There are differences internationally, however, about the relative weight policyholder protection plays compared to other regulatory goals, such as maintaining an insurance market with available coverage at affordable prices and/or fostering successful financial markets. Differences in regulatory missions will likely result in different views of regulatory success.

13. Protection of the policyholder, beneficiaries and claimants is a top priority in all U.S. regulatory decisions. However, regulators must continuously evaluate the optimum level of regulation in terms of the costs and benefits associated with facilitating effective and efficient markets for insurance products, the fair and equitable treatment of insurance consumers, and the financial stability and reliability of insurance institutions.

14. One way to measure success is to determine how well a jurisdiction meets its own regulatory mission; but, even then, regulatory success is not fully quantifiable. While the primary goal of U.S. insurance regulators is policyholder protection by attempting to remedy areas of concern so there is no adverse impact on policyholders and others relying on insurance coverage, regulators will liquidate an insurer, if necessary, to ensure policyholder protection and successful rehabilitation outcomes. One can measure a variety of quantifiable activities in the business and regulation of insurance, but that does not measure the scope or success of a regulatory regime. Regulatory success also includes the extensive, and not often quantifiable, value regulators bring to "fix" ongoing insurer financial and market issues with insurers to prevent insolvencies.

15. Regulatory success in the U.S. is a judgment call that involves consideration of many factors: the frequency and extent the regulatory regime or framework aided insurers by identifying and rectifying potential problems before those problems could cause harm to policyholders and claimants; the rate of insolvencies and the payments to policyholders in those insolvencies; effective and efficient rehabilitation actions; market health, viability and competition; and a perceived and actual cost-benefit analysis of the regulatory regime.

16. The U.S. national state-based insurance regulatory system has a strong track record of protecting consumers and overseeing solvency, especially during the recent crisis when the insurance sector remained relatively stable compared to other financial sectors. Success is also evidenced by the depth and breadth of the U.S. insurance industry and capacity of the insurance guaranty system. With close to 8,000 insurers, few systemically important financial institutions (SIFIs) and limited interconnectivity between insurers and banks, the market is alive and well.

17. The following sections of the white paper will provide an overview of the current U.S. Framework; an evaluation of U.S. market competiveness, considering our regulatory mission; a more detailed description of financial regulation and regulatory tools used in the Framework; and an elaboration on expected SMI changes to the Framework. The following describes the purpose of each section:

    Section 1 – Overview

    Section 2 – *The United States Insurance Financial Solvency Framework:* The purpose of this section is to describe the U.S. insurance regulatory framework for financial solvency, the core principles underlying that framework, and the U.S. Insurance Regulatory Mission.

Section 3 – U.S. Insurance Financial Regulatory Oversight: The purpose of this section is to expand on the framework of the system, drilling down to the mechanics of the processes in U.S. financial solvency insurance regulation.

Section 4 – Market Regulation: The purpose of this section is to tie financial and market regulation together, as required in the U.S. Insurance Regulatory Mission. This section also describes the marketplace and considerations for insurance regulators.

Section 5 – Solvency Modernization Initiative: The purpose of this section is to document the SMI self-review, the improvements made in the SMI, and the reasons why U.S. regulators made or did not make changes.

Section 2

The United States Insurance Financial Solvency Framework and Core Principles

1. The purpose of this section is to describe the framework of the U.S. Insurance Financial Solvency System and present a set of core financial principles underlying this framework.

2. This section provides a description of the U.S. Insurance Financial Solvency Framework that, while drawing upon ideas developed by the International Association of Insurance Supervisors (IAIS), goes beyond the IAIS in important, material ways. In particular, in the U.S. regulatory system, ongoing collaborative regulatory peer review, regulatory checks and balances, and risk focused financial surveillance form the foundation of the regulatory process.[1] In addition, the framework indicates that the U.S. Insurance Financial Solvency Core Principles are embodied in the NAIC's Financial Regulation Standards and Accreditation Program, which is a uniform program to which all states subscribe. Also, included in this section is a discussion of the seven U.S. Insurance Financial Solvency Core Principles

Presentation of U.S. Insurance Financial Solvency Framework

3. The state regulatory system in the United States has had over a 100 year history of solvency regulation. This system is comprised of state insurance departments (currently 50 states, the District of Columbia and five territories), and can best be described as a national system of state-based regulation. The NAIC assists regulators in a nonbinding, supplementary role.

4. Ultimate regulatory responsibility for insurer solvency rests with each state insurance department and the state insurance Commissioner In a free market economy, such as in the U.S., some insurer insolvencies are naturally expected. The regulatory aim in the U.S. is to limit the frequency and size of insurer insolvencies. By following solvency standards, performing risk focused financial surveillance including extensive on-site examinations, and enforcing solvency related insurance laws, regulations and guidelines, the state regulatory system has limited insurer insolvencies and minimized the cost to policyholders and claimants of such insolvencies. A hallmark of the state regulatory system is its dynamic efforts to constantly improve the regulatory solvency system and adjust the system as needed, especially regarding inputs into the model used to determine asset, liability and capital requirements.

5. The NAIC is a voluntary organization of the chief insurance regulatory officials of the state insurance departments, and its overriding objective is to assist state insurance regulators in protecting consumers and helping maintain the financial stability of the insurance industry. The NAIC achieves this by offering financial, actuarial, legal, computer, research, market conduct, and economic expertise to state regulators. It is through the NAIC that insurers are provided the uniform platforms and coordinated systems they need in an ever-changing marketplace.

[1] For purposes of this document, the term "regulator" refers to the ongoing supervision and oversight of entities under the authority of the state insurance department with the assistance of the NAIC. This terminology contrasts with the use of the term "regulator" in other parts of the world. In other parts of the world, regulator refers to the government agency responsible for developing regulations (e.g., Ministry of Finance or Treasury Department), while the term "supervisor" refers to the government officials responsible for overseeing insurance entities.

Regulatory Mission as Starting Point for Framework

6. The starting point or context for the U.S. Insurance Financial Solvency Framework is the mission of insurance regulation in the United States:

   U.S. Insurance Regulatory Mission: To protect the interests of the policyholder and those who rely on the insurance coverage provided to the policyholder first and foremost, while also facilitating the financial stability and reliability of insurance institutions for an effective and efficient market place for insurance products.

7. This mission has been used for years as the basis on which regulatory decisions have been made, including overall industry policy decisions and regulatory decisions for individual insurers. While the policyholder is the focal point of the mission, this mission is mindful that regulatory actions and decisions will have an impact on the operation of insurance markets and their efficiency. Because it is felt that "facilitating the financial stability and reliability of insurance institutions for an effective and efficient market place for insurance products" is in the best interests of policyholders (e.g., cost efficiencies and product innovation), this is not considered to be a separate and distinct or secondary mission, but is considered to support a focus on the policyholder.

Preconditions for Effective Regulation

8. To achieve its mission the regulatory system must have the requisite authority. This requisite authority is comprised of the following elements: a legal basis, independence and accountability, adequate powers, financial resources, human resources, legal protection and confidentiality. These elements form the preconditions for effective insurance regulation.

   Regulatory Authority: The regulatory authority has adequate powers, legal protection and financial resources to exercise its functions and powers; is operationally independent from commercial and political interference in the exercise of its functions and powers; is ultimately accountable to the public; hires, trains, and maintains sufficient staff with high professional standards; and treats confidential information appropriately.

9. The U.S. Insurance Financial Solvency Framework has been created over many years through the unified development of NAIC model laws, regulations, and other NAIC requirements. The adoption of these model laws within the individual states has created a legal framework for insurance regulation that is largely uniform throughout all of the states. To carry out the laws, regulations and other requirements, individual states have created insurance departments that are staffed with personnel that have the necessary knowledge and expertise. These state insurance departments act independently of insurers. In the course of pursuing their regulatory responsibilities, especially when solvency is at issue, regulators allow for the sharing of otherwise confidential documents with any state, federal agency or foreign country provided that the recipients are required, under their law, to maintain their confidentiality.

U.S. Insurance Financial Solvency Regulation Foundations

10. Among the unique features of U.S. insurance regulation are (1) the extensive systems of peer review, communication and collaborative effort that produce checks and balances in regulatory oversight and (2) the diversity of perspectives with compromise that leads to centrist solutions. These, in

combination with a risk-focused approach to regulation, form the foundation for insurance regulation in the U.S., as explained below.

11. The U.S. insurance market is comprised of thousands of small to large-sized insurance companies and groups, as well as conglomerates. To effectively regulate in such a large market, a risk-focused approach is utilized by state regulators. Under a risk-focused approach, attention is paid to the greatest risks faced by insurers and the insurance market. Explicit examples where this practice is applied are in on-site examinations and the ongoing analysis of nationally significant U.S. insurance groups (as explained later in this section).

12. Mechanisms for peer review encourage effective regulatory and supervisory practices. The ongoing analysis of insurance groups provides an example of the checks and balances provided by peer review. Most regulators' interactions are collaborative and collegial; however, situations could arise where other state insurance commissioners can question the actions of another state insurance department, and, if necessary, pressure another state insurance department to act. This pressure is possible because regulators in other states have the power to examine all companies doing business in their state even though headquartered in other states and, in the worst case, to suspend their licenses to operate. Of course, free-flowing information among state regulators underlies this process; and the willingness of state insurance regulators to challenge and be challenged by other state regulators has developed over time in the U.S. as regulators work cooperatively with each other.

13. In regulation, there is a constant need to balance regulatory costs and benefits. Overregulation can impose unnecessary costs on consumers, while under-regulation (or de-regulation) can allow unnecessary harm to consumers and taxpayers. The balance between these two regimes is difficult to determine, but because of the multitude of diverse perspectives in the state U.S. regulatory system, it is less likely to end up at either extreme. Rather, the search for compromise tends to produce centrist solutions. Thus it is highly unlikely that a dogmatic move toward excessive deregulation (or overregulation) could occur in the state-based system.

U.S. Insurance Financial Solvency Core Principles[2] and the Accreditation Program

14. Seven core principles have been identified for the U.S. Insurance Financial Solvency Framework, as described below.

(1) *U.S. Insurance Financial Solvency Core Principle 1:*
Regulatory Reporting, Disclosure and Transparency

Insurers are required to file standardized annual and quarterly financial reports that are used to assess the insurer's risk and financial condition. These reports contain both qualitative and quantitative information and are updated, as necessary, to incorporate significant common insurer risks. Most of these reports are public information, allowing for a high level of transparency.

(2) *U.S. Insurance Financial Solvency Core Principle 2:*
Off-site Monitoring and Analysis

Off-site solvency monitoring is used to assess, on an ongoing basis, the financial condition of the insurer as of the valuation date and to identify and assess current and prospective risks through risk-focused surveillance. The results of the off-site analysis are included in an insurer profile for continual solvency monitoring. Many off-site monitoring tools are maintained by the NAIC for regulators (such as the Financial Analysis Solvency Tools -- FAST).

(3) *U.S. Insurance Financial Solvency Core Principle 3:*
On-site Risk-focused Examinations

U.S. insurance regulators carry out risk-focused, on-site examinations in which the insurer's corporate governance, management oversight and financial strength are evaluated, including the system of risk identification and mitigation, on a current and prospective basis. The reported financial results are assessed through the financial examination process and a determination is made of the insurer's compliance with legal requirements.

(4) *U.S. Insurance Financial Solvency Core Principle 4:*
Reserves, Capital Adequacy and Solvency

To ensure that legal obligations to policyholders, contract holders and others are met when they come due, insurers are required to maintain reserves and capital and surplus at all times and in such forms so as to provide an adequate margin of safety and avoid being in hazardous financial condition. The most visible measure of capital adequacy requirements is associated with the RBC system. The RBC calculation uses a standardized formula to benchmark specified level of regulatory actions for weakly capitalized insurers.

(5) *U.S. Insurance Financial Solvency Core Principle 5:*
Regulatory Control of Significant, Broad-based Risk-related Transactions/Activities

[2] For purposes of this white paper, a core principle is an approach, a process or an action that is fundamentally and directly associated with achieving the mission.

The regulatory framework recognizes that certain significant, broad-based transactions/activities affecting policyholders' interests must receive regulatory approval. These transactions/ activities encompass licensing requirements; change of control; the amount of dividends paid; transactions with affiliates; and reinsurance.

(6) *U.S. Insurance Financial Solvency Core Principle 6:*
Preventive and Corrective Measures, Including Enforcement

The regulatory authority takes preventive and corrective measures that are timely, suitable and necessary to reduce the impact of risks identified during on-site and off-site regulatory monitoring. These regulatory actions are enforced as necessary.

(7) *U.S. Insurance Financial Solvency Core Principle 7:*
Exiting the Market and Receivership

The legal and regulatory framework defines a range of options for the orderly exit of insurers from the marketplace. It defines solvency and establishes a receivership scheme to ensure the payment of policyholder obligations of insolvent insurers subject to appropriate restrictions and limitations.

The Financial Regulation Standards and Accreditation Program

15. It is primarily through the states' adoption of NAIC model laws and model regulations or substantially similar implementation that the U.S. Insurance Financial Solvency Core Principles can function effectively within competitive market dynamics. Accreditation is a certification given to a state insurance department once it has demonstrated it has met and continues to meet a wide range of legal, financial, functional and organizational standards as determined by a committee of its peers. All fifty states, the District of Columbia and Puerto Rico are currently accredited.

16. The purpose of the Financial Regulation Standards and Accreditation Program is for state insurance departments to meet minimum, baseline standards of solvency regulation, especially with respect to regulation of multi-state insurers. The emphasis in the Accreditation Program and the processes it creates is on: (1) adequate solvency laws and regulations to protect consumers; (2) effective and efficient financial analysis and examination processes based on priority status of insurers; (3) cooperation and information sharing with other state, federal or foreign regulatory officials; (4) timely and effective action when insurance companies are identified as financially troubled or potentially troubled; (5) appropriate organizational and personnel practices; and (6) effective processes for company licensing and review of proposed changes in control. At the present time, for a state to be accredited, it must adopt certain laws, regulations or administrative practices that provide appropriate regulatory authority and consumer protections in a variety of aspects of solvency regulation.[3] Appendix 2 provides more details about accreditation.

17. To become accredited, the state must submit to a full-scope on-site accreditation review. The review is extensive, as teams of regulators can typically spend months on an insurer's premises to complete a full-scope examination. Depending on the results of the review, the state is accredited or it is not (i.e.,

[3]Specific standards must be complied with that relate to financial analysis, financial examinations, information sharing, and procedures for troubled insurers. States encourage professional development and establish organizational and personnel standards regarding minimum educational and experience requirements and must have the ability to attract and retain qualified personnel to obtain and maintain accreditation status.

a pass/fail system is used). To remain accredited, an accreditation review must be performed at least once every five years with interim annual reviews. If necessary management letter comments may be provided to the state and interim follow-up reviews may be required.

U.S. Insurance Financial Solvency Standards and Monitoring

18. The implementation of the Accreditation Program requires state adoption of model laws and regulations that incorporate Insurance Financial Solvency Standards and Monitoring. These can be categorized into Insurance Company Financial Solvency Requirements and Regulatory Monitoring Requirements. Examples of each are provided below.

U.S. Insurance Company Financial Solvency Requirements

U.S. Insurance Company Financial Solvency Requirements consist of specific state laws, guidelines, regulations, or rules which are applicable to insurers. These standards are documented in the NAIC's Financial Regulation Standards and Accreditation Program.

Examples of U.S. Insurance Company Financial Solvency Requirements:

(1) Insurers' submission of the annual and quarterly financial statements ("the annual statement" or "blank").
(2) Most insurers' must annually submit a financial statement audited by a CPA, and their reserve estimates must be attested to by an actuary.
(3) *Management's Report of Internal Control over Financial Reporting* is required of all insurers whose premiums exceed a predefined threshold.
(4) Insurers are required to report the results of their risk-based capital calculation in the annual statement.[4]
(5) Insurers must adhere to state minimum capital and surplus requirements.
(6) Insurers must submit to examinations as deemed necessary by the regulator.
(7) Each state has statutes requiring insurers to invest in a diversified investment portfolio both with respect to type of investment and the issuer.
(8) There is a limitation on the amount on any single insured risk a property casualty insurer may underwrite.
(9) Producer controlled insurers must meet special contract provisions, have an audit committee and separate reporting requirements.
(10) For life and accident and health insurers, reserve requirements must adhere to statutory minimums and actuarial standards.
(11) All insurers are required to report investment values in the financial statements in accordance with the *Purposes and Procedures Manual of the Securities Valuation Office*.
(12) Insurers are required to use the NAIC's *Accounting Practices and Procedures Manual* and the *Annual Statement Blank and Instructions* in constructing their statutory financial statements.[5]
(13) Reinsurance credit is governed by the NAIC Credit for Reinsurance Model Law, which imposes standards on allowing such credit.

[4] The risk-based capital (RBC) system is discussed in more detail later in Core Principle 4.

[5] For example, these tools restrict discounting property and casualty reserves, and specific tables approved by regulators are required to establish reserves for various life insurance products. Only certain assets (admitted assets) are allowed to be considered as statutory assets. There are significant reinsurance requirements that take into account the ability of reinsurers to pay. One of these requirements includes statutory accounting requirements for taking a reserve credit for reinsurance.

U.S. Insurance Financial Solvency Regulatory Monitoring Requirements

U.S. Insurance Financial Solvency Regulatory Monitoring Requirements are laws, regulations and rules that must be adopted by the state and that are applicable to state regulators. Many of these solvency standards are requirements of the Financial Regulation Standards and Accreditation Program.

Examples of U.S. Insurance Financial Solvency Regulatory Monitoring Requirements:

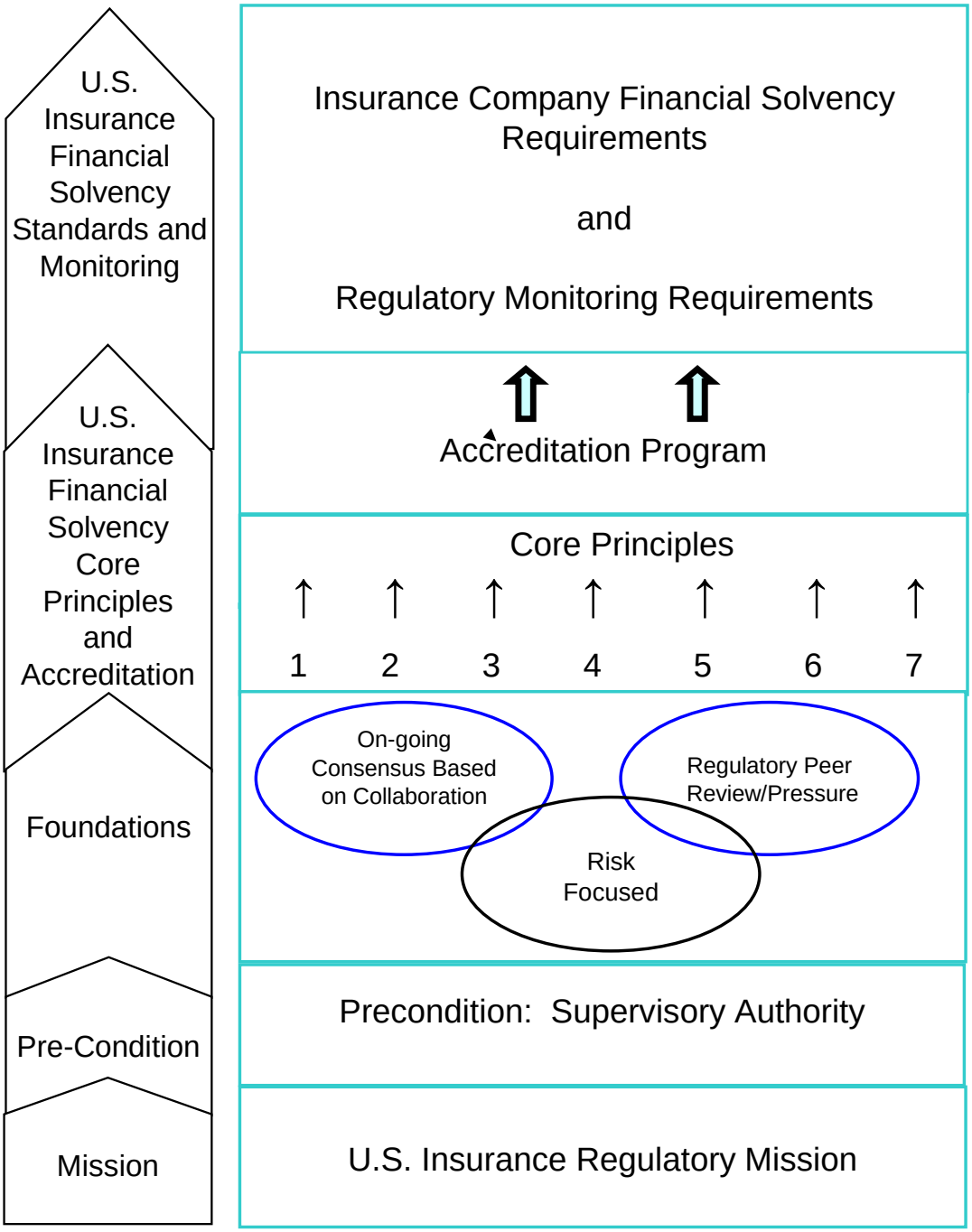
(1) Regulators are required to examine an insurer at least once every five years or more frequently as deemed appropriate and have the authority to examine a company at any time it is deemed necessary by the Commissioner.
(2) If a potential capital deficiency is signaled by the RBC result, a ladder of intervention exists under which regulators are required to undertake certain actions depending on the degree of deficiency. This intervention can vary from requiring insurers to file a plan of corrective action to regulatory takeover of the insurer.
(3) Certain transactions require approval (e.g., transactions among affiliated insurers).

Additionally, regulatory monitoring includes other surveillance processes such as:

(1) NAIC's FAST Tools. FAST encompasses a wide-ranging review/testing system that includes (but is not limited to): (1) a scoring system based on over 20 financial ratios; (2) the Analyst Team System (ATS) (an automated review process that creates a national prioritization system using statistical analysis, a scoring system, and RBC to assign review levels for insurers); (3) RBC trend test; and (4) loss reserve projection tools. Insurers deemed to be performing poorly from the FAST analysis are reviewed by experienced analysts to determine the degree of financial distress present, if any. Insurers deemed to be in financial distress are prioritized by the degree of financial distress and the results are communicated to the state insurance departments in which the insurer is licensed.[6]
(2) Nationally significant insurers are reviewed every quarter and those that appear to be performing poorly are prioritized for more detailed analysis by a group of experienced, seasoned financial regulators (i.e., the Financial Analysis Working Group (FAWG)). The FAWG committee confirms/informs the lead state regulator of problems with insurers in their state and can assert peer pressure on the regulator to intervene to address the troubled insurer's situation.

[6] The domestic regulator gives all insurers a priority status which is a driver for the level of risk focused surveillance an insurer receives.

Diagram of U.S. Insurance Financial Solvency Framework



Overview of U.S. Insurance Financial Solvency Core Principles

This section provides a brief discussion of each U.S. Insurance Financial Solvency Core Principle.

19. U.S. Insurance Financial Solvency Core Principle 1: Regulatory Reporting, Disclosure and Transparency

U.S. regulators receive required financial reports from insurers on a regular basis that are the baseline for continual assessment of the insurer's risk and financial condition. Standardized financial reporting is used in the financial statements to ensure comparability of results among insurers. To address concerns with specific companies or issues, supplemental data is requested in addition to the standardized data, and these data may be requested on a more frequent basis from specific companies. The standardized format is updated as necessary to incorporate significant, common insurer risks.

20. The financial reports filed with the regulator include the set of comprehensive financial statements known collectively as the Annual Statement. Also included in the financial reporting requirements is the filing of quarterly financial statements. To increase comparability and consistency in reporting, the insurer is required to complete the annual and quarterly statements in accordance with NAIC instructions, which provide specific direction on how the statements are to be completed. In addition, NAIC statutory accounting principles are used as the baseline accounting requirements in all financial reports.

21. The financial reports also include numerous qualitative disclosures, each of which are designed to identify potential risks of the insurer. These include but are not limited to general and specific interrogatories, the notes to financial statements, management's discussion and analysis, an actuarial opinion, and an annual audit opinion from an independent certified public accountant. Other standardized reports are filed with the regulator throughout the year that identifies more specific risks (e.g., investment risk interrogatories).

22. The information contained in all of these financial reports is designed to be thorough, so that sufficient information is provided to the regulator to continually monitor and identify specific risks faced by the insurer.[7] The financial reports are used extensively in regulatory solvency monitoring, including on-site examinations and off-site monitoring. That is, the regulatory reports feed into the off-site monitoring analysis and provide a foundation for on-site examinations. In turn, off-site monitoring and examinations are used to determine whether additional or more frequent reporting may be required of an insurer.

23. The annual and quarterly statements are electronically captured by the NAIC in two formats: data tables available for querying and automated analytical tool usage; and PDF files that are publicly

[7]Carrying value, fair value, credit quality designation and other pertinent information are disclosed for every applicable investment held by the insurer; and the detailed disclosures are categorized by asset type, e.g., issuer obligations vs. collateralized mortgage obligations and other structured securities. Similarly, each reinsurance contract is disclosed along with various amounts payable or receivable, grouped by assumed vs. ceded insurance, and categorized by type of entity, e.g., affiliated or mandatory pool. Property and casualty lines of business, which use a principles-based reserving approach, are disclosed in great detail regarding losses and loss expenses, including loss reserve triangles and historical development of various aspects of reserves, e.g., bulk and incurred but not reported (IBNR) reserves.

available and intended to provide consumers with direct access to financial information submitted by any insurer.[8]

24. The public nature of such insurance financial reporting is the most transparent in the world, encouraging industry, financial market and public analysis of insurers' financials to utilize market discipline of insurers. The extensive electronic database provides incredible utility, making NAIC automated analysis tools possible.

25. **U.S. Insurance Financial Solvency Core Principle 2:**
Off-site Monitoring and Analysis

U.S. regulators and the NAIC conduct off-site risk-focused analysis of insurers.

The primary purpose of off-site solvency monitoring is to assess on an on-going basis the financial condition of the insurer as of the valuation date and to identify and assess current and prospective risks through risk-focused surveillance, the results of which are included in an insurer profile for continual solvency monitoring. To accomplish this task, state insurance regulators conduct detailed financial analysis on a quarterly basis using regulatory financial reports, financial tools and other sources of information. Two key sources of information are the results of the most recently completed independent CPA audit report and the results of the most recent on-site regulatory financial examination.[9] Other sources utilized in the analysis include SEC filings, corporate reports, financial statements of ultimate controlling individual/corporation or reinsurers, market conduct reports, rate and policy form filings, consumer complaints, independent rating agency reports, correspondence from agents and insurers, and business media.

26. Off-site monitoring includes follow up on risks identified during the previous quarter's analysis and the most recent on-site examination. Otherwise, state insurance departments generally prioritize the review of their domiciliary insurers based on a system of financial ratios, other screening tools and criteria that are both qualitative and quantitative in form. When insurers with anomalous results (e.g., insurers experiencing significant variations or negative financial results) that may impact financial solvency are identified, regulators will allot necessary resources and prioritize further analysis of these insurers (relative to other non-priority insurers). The results of the ongoing financial analysis are then used to help prioritize and provide focus to future quarterly off-site monitoring activities (potentially increasing monitoring activities to a monthly or weekly basis) and any on-site examination efforts.

27. Many tools used by state regulators are maintained by the NAIC and have been created as regulator only tools. These tools are designed to provide an integrated approach to screening and analyzing the financial condition of insurers and are referred to collectively as FAST (i.e., Financial Analysis Solvency Tools). The tools include a comprehensive handbook that sets forth an overall analysis process to be used, as well as more specific financial analysis/tests that utilize the data provided in insurers' financial reports to identify risks or anomalies.

28. In addition to the NAIC tools described above, the NAIC's Financial Analysis Working Group (FAWG) performs its own analysis of the financial condition of each nationally significant insurer or

[8] Where an insurer's accounting differs from the baseline NAIC statutory accounting principles, the impact to capital and surplus as well as net income is disclosed in the notes to financial statements.

[9] The CPA audit report attests to the fair presentation of the financial statements on an annual basis to allow sufficient reliance upon the insurer's financial reports utilized in all off-site monitoring (see Principle 3).

group each quarter, as well as other insurers or areas posing unique risks identified during a given period, looking not only at statutory financial statements but at other public information, including such financial market metrics as the market's valuation and rating of the insurer's debt and short sales of the insurer's stock. The FAWG does not meet publicly and does not share its deliberations with the general public due to its discussion being focused on the financial condition of individual insurers. This group also monitors industry trends in various risk areas.

29. **U.S. Insurance Financial Solvency Core Principle 3: On-Site Risk-focused Examinations**

U.S. regulators carry out risk-focused, on-site examinations in which the insurer's corporate governance, management oversight and financial strength are evaluated, including the system of risk identification and mitigation. Through the examination, the reported financial results are assessed and a determination is made of the insurer's compliance with legal requirements.

30. As stated earlier, every insurer is subject to a full-scope financial examination at least once every five years.[10] The financial examination process is extensive and is conducted in accordance with the NAIC *Financial Conditional Examiners Handbook*, which contains hundreds of pages of regulatory guidance. However, based upon the results of off-site monitoring, regulators may place a higher priority on insurers which pose a financial risk and, therefore, conduct on-site examinations more frequently. These more frequent examinations may be limited to a review of a specific risk, as long as a full scope exam is conducted at least once every five years.

31. On-site examinations allow state insurance regulators to evaluate and assess the solvency of insurers as of the valuation date and to develop a prospective view of an insurer's risks and its risk management practices. This approach permits a direct and specific focus on the areas of greatest risk to an insurer. The results of the off-site analysis are also utilized in identifying areas of concern and key functional activities to be reviewed.

32. Through the on-site examination, corporate governance practices and processes that are in place to identify and mitigate risk are reviewed and assessed, including, among other things, the function and effectiveness of the board of directors and management, the adequacy of risk management (enterprise risk management), monitoring and management information systems. All significant inherent risks faced by the insurer are identified and assessed in the on-site examination, whether they relate to financial reporting issues or to business and operational issues. After risks have been identified, the examiner is required to identify and assess the internal control processes that mitigate each identified risk. Controls are assessed by considering both their current and prospective design and operating effectiveness. The results of these on-site examination processes also provide regulators an indication of the reliability of the insurer's financial reports utilized in off-site analysis.

33. To prevent duplicative examination efforts by regulators for insurers writing in multiple states, regulators may rely on the exam work of the NAIC accredited domiciliary state. Additionally, for large insurance holding company groups, regulators are encouraged to coordinate their examinations of individual entities by following a lead state concept, thereby allowing the pooling of resources to complete one coordinated exam for the insurer group. The role of the lead state is to coordinate and ensure proper communication is occurring for analysis, examination and other solvency-related and market regulatory issues.

[10] In some states the period is three years.

34. In conjunction with both the on-site examinations and off-site monitoring, regulators review insurer compliance with laws and regulations. Laws and regulations can vary by state.[11] Some states will combine their review of compliance with market conduct activities with a financial on-site exam.

    These full-scope examinations have been essential to the success of the U.S. regulatory system.

35. **U.S. Insurance Financial Solvency Core Principle 4:**
    Reserves, Capital Adequacy and Solvency

    To ensure that legal obligations to policyholders, contract holders and others are met when they come due, insurers are required to maintain reserves and capital and surplus at all times and in such forms so as to provide an adequate margin of safety.

36. Accounting standards, risk-based capital requirements, minimum statutory reserves and state-specific minimum capital requirements form the backbone of the reserve and capital adequacy requirements. Conservatism is a pervasive concept in specification of these requirements. As an example, conservatism is one of the foundations of the statutory accounting system.[12] Conservative statutory accounting reporting provides a reasonable level of assurance that an insurer's resources are adequate to meet its policyholder obligations at all times. Other NAIC standards are designed with the same conservatism principle (e.g., model investment laws, credit for reinsurance laws, etc.).

37. The most visible measure of capital adequacy requirements is associated with the RBC system. The RBC calculation uses a standardized formula to benchmark specified level of regulatory actions for weakly capitalized insurers. A significant portion of the RBC formula is derived from the annual statement, which is based upon statutory accounting. The RBC amount explicitly considers the size and risk profile of the insurer.[13] The RBC calculation provides for higher RBC charges for riskier assets or for riskier lines of business so that more capital is needed as a result. Although RBC results indicate when an insurer's capital position is weak or deteriorating, a ladder of intervention levels exists within the RBC system. Thus, regulators have the authority to require insurers to take some action or the regulator may have the authority to take action with respect to an insurer when the capital level falls within certain threshold amounts that are above the minimum capital requirement. The degree of action depends upon the relative capital weakness as determined by the RBC result and the existence of any mitigating or compounding issues.

38. States maintain fixed minimum capital requirements (statutes) relating to incorporation and licensing within the particular state that must also be met. Further, the state has the authority to require additional capital and surplus based upon the type, volume, and nature of the insurance business transacted.

[11] These laws typically include, but are not limited to, compliance with investment statutes and regulations regarding types of permissible investments and diversification and liquidity of investments, compliance with (minimum) reserving standards and minimum capital and surplus requirements (including RBC), and the restriction of certain reinsurance activities.

[12] Statutory accounting practices stress measurement of the ability to pay claims of insurers in the future, while generally accepted accounting principles (GAAP) stress measurement of earnings of a business from period to period, and the matching of revenues and expenses for the measurement period. Source: Preamble of the NAIC *Accounting Practices and Procedures Manual*.

[13] The factors used in the formula are based on considerable research and reflect industry loss experience.

39. Insurers have conservative reserve requirements in addition to capital requirements. Thus, the effect of having both reserves and capital adequacy requirements means that (1) policyholder obligations are covered by enough resources to meet most future economic scenarios, and (2) there are enough resources so that an adverse trend can be detected in time for the regulator to suggest/take corrective action.

40. In addition to these reserve and RBC requirements, regulators assess financial solvency and whether an insurer is in hazardous financial condition (See Core Principle 6).

41. **U.S. Insurance Financial Solvency Core Principle 5:**
Regulatory Control of Significant, Broad-based Risk-related Transactions/Activities

The regulatory framework recognizes that certain significant, broad-based transactions/ activities affecting policyholders' interests must receive regulatory approval.

42. Certain significant, broad-based transactions/activities of insurers that affect risk are not part of the day-to-day routine of underwriting and issuing insurance and/or have broad social and equity consequences. To control these risks, regulatory approval of these transactions/activities may be required. Many of these transactions are also reviewed during the off-site monitoring or the on-site examination process to assess insurer compliance. These transactions/activities encompass licensing requirements; change of control; the amount of dividends paid; transactions with affiliates; and reinsurance as explained below.

    (1) **Licensing Requirements:** An insurer must be licensed before it can operate in a state. The regulator sets the criteria for licensing, and these criteria are clear, objective and public. Regulators assess the license application; this assessment consists of a review of the ownership structure, quality and history of management, internal controls, and projected financial condition. Applicants that do not meet the criteria do not obtain a certificate of authority and/or license to conduct the business of insurance. [14]

    (2) **Change in Control:** Notification is required for changes in ownership or control. No transaction involving a change in ownership or control can be completed unless regulatory approval is granted or waived. The regulator bases the approval or rejection decision on financial statements, evaluation of current or potential management, and other relevant information filed with the regulator.

    (3) **Dividends:** The regulator requires prior notice of all stockholder dividends and dividends in excess of a predefined standard (extraordinary dividends) must be filed for approval. Extraordinary dividends cannot be paid until regulatory approval is granted.[15]

    (4) **Transactions with Affiliates:** The regulator requires notice for transactions with affiliates and has the authority to reject the transaction. These transactions include, but are not limited

[14] Effective January 1, 2012, the Financial Regulation Standards and Accreditation Program will incorporate new standards related to company licensure and change in ownership. These standards require that state insurance departments have sufficient, qualified resources to review applications in a timely manner and have appropriate procedures to properly analyze the application.

[15] This is a general requirement, but individual state requirements may vary. For example, not all states require approval of ordinary dividends. Some of the states require that all stockholder dividends be approved.

to, various intercompany cost sharing arrangements, guarantees, reinsurance, asset purchase and disposal agreements, and tax allocation agreements between the insurer and its affiliates.

(5) **Reinsurance:** Reinsurance transactions are subject to regulatory review and approval, with the result that some reinsurers may be required to post collateral.

43. **U.S. Insurance Financial Solvency Core Principle 6: Preventive and Corrective Measures, Including Enforcement**

The regulatory authority takes preventive and corrective measures that are timely, suitable and necessary to reduce the impact of risks identified during on-site and off-site regulatory monitoring. These regulatory actions are enforced as necessary.

44. If significant solvency risks are identified as being improperly mitigated such that the insurer is in a hazardous financial condition, the regulator may take corrective or preventive measures including, but not limited to: requiring the insurer to provide an updated business plan in order to continue to transact business in the state; requiring the insurer to file interim financial reports; limiting or withdrawing the insurer from certain investments or investment practices; reducing, suspending or restricting the volume of business being accepted or renewed by the insurer; ordering an increase in the insurer's capital and surplus; ordering the insurer to correct corporate governance practice deficiencies; requiring a replacement of senior management; and seeking a court order to place the company under conservation, rehabilitation, or liquidation;

45. In addition to the corrective measures that can be taken when the insurer is determined to be in a hazardous financial condition, under the RBC system, regulators have the authority and statutory mandate to take preventive and corrective measures that vary depending on the capital deficiency indicated by the RBC result. The broad authority for determining if an insurer is considered to be in a hazardous financial condition is an important part of the U.S. system, and allows for more precision within the RBC calculation.

46. These preventive and corrective measures are designed to provide for early regulatory intervention to correct problems before insolvencies become inevitable, thereby minimizing the number and adverse impact of insolvencies.

47. **U.S. Insurance Financial Solvency Core Principle 7: Exiting the Market and Receivership**

The legal and regulatory framework defines a range of options for the orderly exit of insurers from the marketplace. It defines solvency and establishes a receivership scheme to ensure the payment of policyholder obligations of insolvent insurers subject to appropriate restrictions and limitations.

48. Receivership laws provide measures for regulators to attempt to prevent insolvencies, minimize losses and provide protection for claimants (including policyholders) before an insolvency and/or if an insurer is found to be insolvent. Options considered by regulators as possible alternatives to insolvency include mergers, acquisitions, reinsurance arrangements, non-renewal of part or all of the insurer's book of business, and the viability of allowing the insurer to be placed in run-off mode under its own management. When insolvency cannot be prevented, receivership laws give some priority to the provision of benefits to claimants, including policyholders, or the payment of claims arising under policies. State guaranty associations have been established to protect policyholders,

claimants and beneficiaries against financial losses due to insurer insolvencies. Fundamentally, the purpose of an insolvency guaranty law/association is to cover an insolvent insurer's financial obligations, within statutory limits, to policyholders, annuitants, beneficiaries and third-party claimants.

Section 2
Appendix 1
List of relevant Model Laws, Rules, Regulations and Working Groups by U.S. Insurance Financial Solvency Core Principle

U.S. Insurance Financial Solvency Core Principle 1:
Regulatory Reporting, Disclosure and Transparency

Accounting Practices and Procedures Manual
Blanks (E) Working Group
Statutory Accounting Principles (E) Working Group
Emerging Accounting Issues (E) Working Group
Financial Analysis Handbook (E) Working Group
Standard Valuation Law (#820)
Actuarial Opinion and Memorandum Regulation (#822)
Part B, Financial Regulation Standards and Accreditation Program
Annual Financial Reporting Model Regulation (#205)
Annual Statement Instructions
Purposes and Procedures Manual of the Securities Valuation Office (SVO)
Business Transacted with Producer Controlled Property/Casualty Insurer Act (#325)

U.S. Insurance Financial Solvency Core Principle 2:
Off-Site Monitoring and Analysis

Analyst Team System
Financial Analysis Solvency Tools (FAST)
Accounting Practices and Procedures Manual
Annual Financial Reporting Model Regulation (#205)
Insurance Holding Company System Regulatory Act (#440)
Actuarial Opinion and Memorandum Model Regulation (#822)
Blanks (E) Working Group
Part B, Financial Regulation Standards and Accreditation Program
Business Transacted with Producer Controlled Property/Casualty Insurer Act (#325)
Financial Analysis Handbooks

U.S. Insurance Financial Solvency Core Principle 3:
On-site Risk-focused Examinations

Model Law on Examinations (#390)
Financial Condition Examiners Handbook
Annual Financial Reporting Model Regulation (#205)
Insurance Holding Company Holding Company Regulatory Act (#440)
Investments of Insurers Model Act (Defined Limits Version) (#280)
Derivative Instruments Model Regulation (#282)
Investments of Insurers Model Act (Defined Standards Version) (#283)
Actuarial Opinion and Memorandum Model Regulation (#822)
Part B, Financial Regulation Standards and Accreditation Program

U.S. Insurance Financial Solvency Core Principle 4:
Capital Adequacy and Solvency

Risk-Based Capital (RBC) for Insurers Model Act (#312)
Risk-Based Capital (RBC) for Health Organizations Model Act (#315)
Accounting Practices and Procedures Manual
Part A, Financial Regulation Standards and Accreditation Program
Annual Statement Instructions
Risk-Based Capital Forecasting and Instructions
Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in Hazardous Financial Condition (#385)
Credit for Reinsurance Model Act (#785)

U.S. Insurance Financial Solvency Core Principle 5:
Regulatory Control of Significant, Broad-based Risk-related Transactions/Activities

Interest Maintenance Reserve Calculation (Life Insurers)
Investments of Insurers Model Act (Defined Limits Version) (#280)
Investments of Insurers Model Act (Defined Standards Version) (#283)
Actuarial Opinion and Memorandum Regulation (#822)
Business Transacted with Producer Controlled Property/Casualty Insurer Act (#325)
Part A, Financial Regulation Standards and Accreditation Program
Insurance Holding Company System Regulatory Act (#440)

U.S. Insurance Financial Solvency Core Principle 6:
Preventive and Corrective Measures, Including Enforcement

Troubled Insurance Company Handbook
Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in Hazardous Financial Condition (#385)
Risk-Based Capital (RBC) for Insurers Model Act (#312)
Administrative Supervision Model Act (#558)
Part A, Financial Regulation Standards and Accreditation Program

U.S. Insurance Financial Solvency Core Principle 7:
Exiting the Market and Receivership

Troubled Insurance Company Handbook
Insurer Receivership Model Act (#555)
Part A, Financial Regulation Standards and Accreditation Program

Section 2
Appendix 2
Requirements for Accreditation

1. The Standards have been divided into three major categories: laws and regulations (Part A); regulatory practices and procedures (Part B); organizational and personnel practices (Part C); and organization, licensing and change of domestic control of insurers (Part D).

Part A: Laws and Regulations (Traditional Insurers)[16]

Preamble

2. The purpose of the Part A: Laws and Regulations Standards is to assure that an accredited state has sufficient authority to regulate the solvency of its multi-state domestic insurance industry in an effective manner. The Part A standards are the product of laws and regulations that are believed to be basic building blocks for sound insurance regulation. A state may demonstrate compliance with a Part A standard through a law, a regulation, an established practice which implements the general authority granted to the state, or any combination of laws, regulations or practice, which achieves the objective of the standard.

3. The Part A standards apply to traditional forms of "multi-state domestic insurers." This scope includes life/health and property/casualty/liability insurers and reinsurers that are domiciled in the accredited state and licensed, accredited or operating in at least one other state. This scope also includes insurers that are domiciled in the accredited state and operating or accepting business on an exported basis in at least one other state as excess and surplus lines insurers or as risk retention groups; except that the term does not include risk retention groups incorporated as captive insurers. It also does not include those insurers that are licensed, accredited or operating in only their state of domicile but assuming business from insurers writing that business that is directly written in a different state. The terms "insurer" and "insurers" used in the Part A standards fall within the definition of "multi-state domestic insurers." For the purpose of this definition, the term "state" is intended to include any NAIC member jurisdiction, including U.S. territories.

(1) **Examination Authority**

The Department should have authority to examine companies whenever it is deemed necessary. Such authority should include complete access to the company's books and records and, if necessary, the records of any affiliated company, agent, and/or managing general agent. Such authority should extend not only to inspect books and records but also to examine officers, employees, and agents of the company under oath when deemed necessary with respect to transactions directly or indirectly related to the company under examination. The NAIC *Model Law on Examinations* (#390), or substantially similar provisions, shall be part of state law.

[16]Part A differs for risk retention groups.

(2) **Capital and Surplus Requirement**

The Department should have the ability to require that insurers have and maintain a minimum level of capital and surplus to transact business. The Department should have the authority to require additional capital and surplus based upon the type, volume and nature of insurance business transacted. The NAIC *Risk-Based Capital (RBC) for Insurers Model Act* (#312), or provisions substantially similar, shall be included in state laws or regulations.

(3) **NAIC Accounting Practices and Procedures**

The Department should require that all companies reporting to the Department file the appropriate NAIC annual statement blank, which should be prepared in accordance with the NAIC's instructions handbook and follow those accounting procedures and practices prescribed by the NAIC *Accounting Practices and Procedures Manual*, utilizing the version effective January 1, 2001, and all subsequent revisions adopted by the Financial Regulation Standards and Accreditation (F) Committee.

(4) **Corrective Action**

State law should contain the NAIC *Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in a Hazardous Financial Condition* (#325), or a substantially similar provision, which authorizes the department to order a company to take necessary corrective action or cease and desist certain practices that, if not corrected, could place the company in a hazardous financial condition.

(5) **Valuation of Investments**

The department should require that securities owned by insurance companies be valued in accordance with those standards promulgated by the NAIC Securities Valuation Office. Other invested assets should be required to be valued in accordance with the procedures promulgated by the NAIC Financial Condition (E) Committee.

(6) **Holding Company Systems**

State law should contain the NAIC *Insurance Holding Company System Regulatory Act* (#440), or an act substantially similar, and the department should have adopted the NAIC model regulation relating to this law.

(7) **Risk Limitation**

State law should prescribe the maximum net amount of risk to be retained by a property and liability company for an individual risk based upon the company's capital and surplus. This limitation should be no larger than 10% of the company's capital and surplus.

(8) **Investment Regulations**

State statute should require a diversified investment portfolio for all domestic insurers both as to type and issue and include a requirement for liquidity. Foreign companies should be required to substantially comply with these provisions.

(9) **Liabilities and Reserves**

State statute should prescribe minimum standards for the establishment of liabilities and reserves resulting from insurance contracts issued by an insurer; including life reserves, active life reserves, and unearned premium reserves, and liabilities for claims and losses unpaid and incurred but not reported (IBNR) claims. The NAIC *Standard Valuation Law*

(#820) and the *Actuarial Opinion and Memorandum Regulation* (#822), or substantially similar provisions shall be in place.

(10) **Reinsurance Ceded**

State law should contain the NAIC *Credit for Reinsurance Model Act* (#785), the Credit for Reinsurance Model Regulation (#786) and the *Life and Health Reinsurance Agreements Model Regulation* (#791) or substantially similar laws.

(11) **CPA Audits**

State statute or regulation should contain a requirement for annual audits of domestic insurance companies by independent certified public accountants, based on the NAIC *Annual Financial Reporting Model Regulation* (#205).

(12) **Actuarial Opinion**

State statute or regulation should contain a requirement for an opinion on reserves and loss and loss adjustment expense reserves by a qualified actuary or specialist on an annual basis for all domestic insurance companies.

(13) **Receivership**

State law should set forth a receivership scheme for the administration, by the insurance commissioner, of insurance companies found to be insolvent as set forth in the NAIC *Insurer Receivership Model Act* (#555).

(14) **Guaranty Funds**

State law should provide for a regulatory framework such as that contained in the NAIC model acts on the subject, to ensure the payment of policyholders' obligations subject to appropriate restrictions and limitations when a company is deemed insolvent.

(15) **Filings with the NAIC**

State statute, regulation or practice should mandate filing of annual and quarterly statements with the NAIC in a format acceptable to the NAIC except that states may exempt from this requirement those companies that operate only in their state of domicile.

(16) **Producer Controlled Insurers**

States should provide evidence of a regulatory framework, such as that contained in the NAIC *Business Transacted with Producer Controlled Property/Casualty Insurer Act* (#325) or similar provisions.

(17) **Managing General Agents**

States should provide evidence of a regulatory framework, such as that contained in the NAIC *Managing General Agents Act* (#225) or similar provisions.

(18) **Reinsurance Intermediaries**

States should provide evidence of a regulatory framework, such as that contained in the NAIC *Reinsurance Intermediary Model Act* (#790) or similar provisions.

(19)**Regulatory Authority**

State law should provide for a regulatory framework for the organization, licensing and change of control of domestic insurers.

(Note: If a state can provide evidence that none of the entities contemplated in above standards 14, 16, 17 or 18, is either present or allowed to operate in the state, it will not need to demonstrate compliance with that standard.)

Part B: Regulatory Practices and Procedures

Preamble

4. The purpose of Part B is to identify base-line regulatory practices and procedures required to supplement and support enforcement of the states' financial solvency laws in order for the states to attain substantial compliance with the core standards established in Part A. Part B identifies standards that are to be applied in the regulation of all forms of multi-state insurers.

5. Part B sets out standards required to ensure adequate solvency regulation of multi-state insurers. Each state must make an appropriate allocation of its available resources to effectively address its regulatory priorities. In addition to a domestic state's examination and analysis activities, other checks and balances exist in the regulatory environment. These include other states' regulation of licensed foreign companies, the appropriate application of FAST and IRIS ratios, the analyses by NAIC's staff, the NAIC Financial Analysis (E) Working Group, the NAIC Analyst Team System project, and, to some extent, the evaluation by private rating agencies.

6. The scope of Part B is broader than the scope of Part A. "Multi-state insurer" as used in Part B encompasses all forms of insurers domiciled or chartered in the accredited state and licensed, registered, accredited or operating in at least one other state. This scope also includes insurers that are domiciled in the accredited state and operating or accepting business on an exported basis in at least one other state as excess and surplus lines insurers. It does not include those insurers that are licensed, accredited or operating in only their state of domicile but are assuming business from insurers writing that business that is directly written in a different state. The term "insurer" in Part B includes traditional insurance companies as well as, for instance, health maintenance organizations and health service plans, captive risk retention groups, and other entities organized under other statutory schemes. Although this scope includes risk retention groups organized as a captive insurer, it does not include any other type of captive insurer. While the unique organizational characteristics of some of these entities may require specialized laws, their multi-state activity demands solvency oversight that employs the base-line regulatory practices and procedures identified in Part B. For purposes of this definition, the term "state" is intended to include any NAIC member jurisdiction, including U.S. territories.

7. The accreditation program recognizes that complete standardization of practices and procedures across all states may not be practical or desirable because of the unique situations each state faces. States differ with respect to staff and technology resources that are available as well as the characteristics of the domestic industry regulated. For example, states may choose to emphasize automated analysis over manual or vice versa. Reliable results may be obtained using alternative, yet effective, financial solvency oversight methodologies. The accreditation program should not emphasize form over substance in its evaluation of the states' solvency regulation.

(NOTE: FRSAC has adopted Review Team Guidelines that provide detailed guidance to the review teams regarding how compliance with the Part B, Regulatory Practices and Procedures Standards

should be assessed. These guidelines can also assist states in preparing for the accreditation review of their Department.)

(1) **Financial Analysis**

a. **Sufficient Qualified Staff and Resources**

The Department should have the resources to review effectively on a periodic basis the financial condition of all domestic insurers.

b. **Communication of Relevant Information to/from Financial Analysis Staff**

The Department should provide relevant information and data received by the Department, which may assist in the financial analysis process to the financial analysis staff and ensure that findings of the financial analysis staff are communicated to the appropriate person(s).

c. **Appropriate Supervisory Review**

The Department's internal financial analysis process should provide for appropriate supervisory review and comment.

d. **Priority-Based Analysis**

The Department's financial analysis procedures should be priority-based to ensure that potential problem companies are reviewed promptly. Such a prioritization scheme should utilize appropriate factors as guidelines to assist in the consistent determination of priority designations.

e. **Appropriate Depth of Review**

The Department's financial analysis procedures should ensure that domestic insurers receive an appropriate level or depth of review commensurate with their financial strength and position.

f. **Documented Analysis Procedures**

The Department should have documented financial analysis procedures and/or guidelines to provide for consistency and continuity in the process and to ensure that appropriate analysis procedures are being performed on each domestic insurer.

g. **Reporting of Material Adverse Findings**

The Department's procedures should require that all material adverse indications be promptly presented to the commissioner or an appropriate designee for determination and implementation of appropriate regulatory action.

h. **Action on Material Adverse Findings**

Upon the reporting of any material adverse findings from the financial analysis staff, the Department should take timely action in response to such findings or adequately demonstrate the determination that no action was required.

(2) **Financial Examinations**

a. **Sufficient Qualified Staff and Resources**

The Department should have the resources to effectively examine all domestic insurers on a periodic basis in a manner commensurate with the financial strength and position of each insurer.

b. **Communication of Relevant Information to/from Examination Staff**

The Department should provide relevant information and data received by the Department, which may assist in the examination process to the examination staff and ensure that findings of the examination staff are communicated to the appropriate person(s).

c. **Use of Specialists**

The Department's examination staff should include specialists with appropriate training and/or experience or otherwise have available qualified specialists, which will permit the Department to effectively examine any insurer. These specialists should be utilized where appropriate given the complexity of the examination or identified financial concerns.

d. **Appropriate Supervisory Review**

The Department's procedures for examinations should provide for supervisory review of examination workpapers and reports to ensure that the examination procedures and findings are appropriate and complete and that the examination was conducted in an efficient and timely manner.

e. **Use of Appropriate Guidelines and Procedures**

The Department's policies and procedures for the conduct of examinations should generally follow those set forth in the NAIC *Financial Condition Examiners Handbook*. Appropriate variations in methods and scope should be commensurate with the financial strength and position of the insurer.

f. **Performance and Documentation of Risk-Focused Examinations**

The Department's performance and documentation of risk-focused examinations should generally follow the guidance set forth in the NAIC *Financial Condition Examiners Handbook*. Appropriate variations in method and scope should be commensurate with the financial strength and position of the insurer.

g. **Scheduling of Examinations**

In scheduling financial examinations, the Department should follow procedures such as those set forth in the NAIC *Financial Condition Examiners Handbook* that provide for the periodic examination of all domestic companies on a timely basis. This system should accord priority to companies that exhibit adverse financial trends or otherwise demonstrate a need for examination.

h. **Examination Reports**

The Department's reports of examination should be prepared in accordance with the format adopted by the NAIC and should be sent to other states in which the insurer transacts business in a timely fashion.

i. **Reporting of Material Adverse Findings**

The Department's procedures should require that all material adverse findings be promptly presented to the commissioner or an appropriate designee for determination and implementation of appropriate regulatory action.

j. **Action on Material Adverse Findings**

Upon the reporting of any material adverse findings from the examination staff, the Department should take timely action in response to such findings or adequately demonstrate the determination that no action was required.

(3) **Information Sharing and Procedures for Troubled Companies**

a. **Information Sharing**

States should allow for the sharing of otherwise confidential documents, materials, information, administrative or judicial orders, or other actions with the regulatory officials of any state, federal agency or foreign countries providing that the recipients are required, under their law, to maintain its confidentiality. States also should allow for the sharing of otherwise confidential documents, materials, information, administrative or judicial orders, or other actions with the NAIC providing that the NAIC demonstrates by written statement the intent to maintain its confidentiality. The Department should have a documented policy to cooperate and share information with respect to domestic companies with the regulatory officials of any state, federal agency or foreign countries and the NAIC directly and also indirectly through committees established by the NAIC, which may be reviewing and coordinating regulatory oversight and activities. This policy should also include cooperation and sharing information with respect to domestic companies subject to delinquency proceedings.

b. **Procedures for Troubled Companies**

The Department should generally follow and observe procedures set forth in the NAIC *Troubled Insurance Company Handbook*. Appropriate variations in application of procedures and regulatory requirements should be commensurate with the identified financial concerns and operational problems of the insurer.

Part C: Organizational and Personnel Practices

(1) **Professional Development**

The Department should have a policy that encourages the professional development of staff involved with financial surveillance and regulation through job-related college courses, professional programs, and/or other training programs.

(2) **Minimum Educational and Experience Requirements**

The Department should establish minimum educational and experience requirements for all professional employees and contractual staff positions in the financial regulation and surveillance area, which are commensurate with the duties and responsibilities of the position.

(3) **Retention of Personnel**

The Department should have the ability to attract and retain qualified personnel for those positions involved with financial surveillance and regulation.

Part D: Organization, Licensing and Change of Control of Domestic Insurers

Preamble

8. The focus of the Part D standards is on strengthening financial regulation and the prevention of unlicensed or fraudulent activities. The scope of this section only includes the licensing of new companies and Form A filings. The section applies to only traditional life/health and

property/casualty companies and this scope is narrower than that of Part B in that it does not include entities such as health maintenance organizations, health service plans, and captive insurers (including captive risk retention groups). These standards only deal with the department's analysis of domestic companies and do not include foreign or alien insurers. The initial company licensing process does not consider the "multi-state" concept since the company is in its initial licensing phase. The standards regarding Form A filings deal with only filings submitted related to multi-state insurers, as that term is defined in the Part B Preamble.

(1) Qualified Staff and Resources
The department should have minimum educational and experience requirements for licensing staff commensurate with the duties and responsibilities for analyzing company applications. Staff responsible for analyzing applications should have an accounting, insurance, financial analysis or actuarial background.

(2) Sufficient Staff and Resources
The department should have sufficient resources to effectively review applications for primary licensure or Form A filings in a timely manner.

(3) Scope of Procedures for Primary Applications
The department should have documented licensing procedures that include a review and/or analysis of key pieces of information included in a primary licensure application.

(4) Scope of Procedures for Form A Filings
The department should have documented procedures for the review of key pieces of information included in Form A filings.

(5) Use of the Form A Database
The department should utilize the Form A Database as a means of obtaining information on prior filings made by an applicant and informing other states of the receipt and status of Form A filings in a timely manner.

(6) Documentation of Work Performed
The department's files should include evidence that the department's procedures were adequately performed and well documented, including a conclusion regarding whether an application or filing is approved or denied.

Source: *Financial Regulation Standards and Accreditation Program*, March 2012, pp. 7–15.

Section 3

Regulating for Solvency Protects Consumers: U.S. Insurance Financial Regulatory Oversight

Overview of U.S. Financial Regulation

1. As noted in Section 2, the U.S. financial regulatory system can be described as a three-stage process. First, state lawmakers and regulators eliminate or limit some risks through restriction on activities or prior approval mechanisms or when companies modify actions based upon perceived risk/reward assessment and potential risk-based capital (RBC) consequences. Financial oversight is the second stage of the process and where most of the regulatory activity exists. At this stage, regulators are looking for companies in hazardous financial condition and evaluating the potential for insolvency. Regulatory backstops or safeguards, most notably the state guaranty associations and RBC, make up the final stage of the regulatory process.

2. The core of the financial regulatory system in the U.S. is the financial surveillance process for financial oversight, which is predominately built around an extensive and substantially uniform financial reporting system allowing for detailed analysis of asset holdings, reinsurance, and loss/claim reserves. Through the use of our centralized financial reporting database, within minutes regulators can perform stress tests on companies and determine the impact of other company insolvencies on the market. The data provides opportunities to find anomalies from one company to another through benchmarking and other processes and to look for new risk concentrations and/or optimistically valued risks. Because this data and disclosure is vital to the regulatory system, regulators spend considerable effort to validate appropriate financial reporting (e.g., audits, compliance evaluation, actuarial opinions, etc.) to allow for extensive analysis without significant extra attention from the company, thereby keeping regulatory disruptions to a minimum.

Stage 1: Limitation of Risk through Design of the System

Investment Requirements and/or Limitations

3. Regulators deem some risks to be so material and potentially contrary to the best interests of policyholders, that lawmakers and regulators either restrict those investment activities or require pre-approval of certain material transactions. Conservative valuation of assets and liability credits and application of the RBC formula can drive insurers toward less-risky activities.

4. In the 1990s, insolvencies caused by high risk investment strategies led regulators to consider their oversight and possible restriction of insurer investments by imposing either a defined limits or a defined standards approach. Using a defined limits approach, regulators place certain limits on amounts or relative proportions of different assets that insurers can hold to ensure adequate diversification and limit risk. Using a defined standards approach, regulators restrict investments based on a “prudent person” approach, allowing for discretion in investment allocation if the insurer can demonstrate its adherence to a sound investment plan Moreover, the NAIC Capital Markets & Investment Analysis Office reviews insurers’ assets for credit risk, potentially driving insurers toward less-risky investment.

Pre-Approval of Material Transactions and Activities

5. Commissioner approval is required for certain material transactions, such as large investment or reinsurance transactions, and extraordinary dividends. In an insurance holding company system, insurers also need regulatory approval for change in control and the amount of dividends paid. This is to help ensure that the assets of an insurer adequately protect the policyholders and are not unfairly distributed to others.

Valuation Requirements and Reinsurance Credit

6. Statutory accounting principles value some assets conservatively and, thus, are less favorable for investment. Reinsurance provides valuable risk mitigation and can provide significant stability. Therefore, in order to receive credit for ceded reinsurance, the reinsurer must be authorized or post security to cover its obligations.

Risk-Based Capital (RBC)

7. The RBC system was created to provide: 1) a capital adequacy standard that is related to risk; 2) a safety net for insurers 3) uniformity among the states; and 4) regulatory authority for timely action. The RBC system has two main components: 1) the RBC formula, which establishes a hypothetical minimum capital level that is compared to a company's actual capital level; and 2) and RBC model law that grants automatic authority to the state insurance regulator to take specific actions based on the level of impairment. While the RBC capital requirement calculation varies based on the type of asset, RBC does not tend to drive investments, because companies typically hold capital in excess of minimum capital requirements. However, the RBC formula could have some influence on management decisions.

Stage 2: Financial Oversight and Intervention Powers

8. Capital requirements are an important part of every regulatory regime. An insurance company must hold capital greater than the minimum regulatory capital levels to continue in business; however, financial regulation extends beyond just capital requirements in most countries and, in the U.S., financial regulation is much broader still.

9. U.S. insurance regulators can order conservation, rehabilitation or liquidation on numerous statutory grounds ranging from financial insolvency to unsuitable management and operations. The *Insurer Receivership Model Act* (#555) includes the following grounds for regulatory action (among others):

    (1) Impairment, insolvency, or hazardous financial condition;
    (2) Improperly disposed property or concealed, altered, or destroyed financial books;
    (3) Best interest of policyholders, creditors or the public; and
    (4) Dishonest, improperly experienced, or incapable person in control.

10. The most typical financial intervention occurs when a company is in hazardous financial condition. A regulator may deem a company in hazardous financial condition[1] based on:

    (1) Adverse findings in financial analysis or examination, market conduct examination, audits, actuarial opinions or analyses, cash flow and liquidity analyses;
    (2) Insolvencies of a company's reinsurer(s) or within the insurer's insurance holding company system;
    (3) Finding of incompetent or unfit management/director;
    (4) A failure to furnish information or provide accurate information; and,
    (5) Any other finding determined by the commissioner to be hazardous to the insurer's policyholders, creditors, or general public.

11. Financial oversight and the determination of hazardous financial condition is the most valuable and extensive part of financial regulation. Oversight focuses on appropriate asset and liability valuation, the risks accepted by the insurer, the mitigation of those risks, and the amount of capital held in light of the residual risks. Without the extensive financial reporting databases maintained by the NAIC, the financial analysis to evaluate hazardous financial condition would likely require much more significant and time-consuming company input.

12. In addition to numerous activities (such as consideration of management skills, products, sales, market activity, market concentrations, etc.), evaluation of hazardous financial condition status includes the review of an insurer's financial statement preparation, including preparation of all the schedules and audit and actuarial opinions, as well as regulators' financial surveillance, including financial statement validation, analysis and examination.

Financial Reporting Preparation and Requirements

13. The valuable oversight is possible because of the extensive financial reporting databases at the fingertips of each insurance regulator, allowing the financial analysis to occur without additional significant and time-consuming company input. Insurers are required to file standardized annual and quarterly financial reports that the regulators use to assess the insurer's risk and financial condition. These reports contain both qualitative and quantitative information, with content requirements updated as necessary to incorporate significant common insurer risks. Reporting requirements are specified in two forms: through the *Accounting Practices and Procedures Manual*, utilizing fully codified statutory accounting principles, and through the quarterly and annual statement instructions. Requirements run the gamut from typical accounting requirements (e.g., balance sheet and income statement) to detailed data reporting on specified schedules (e.g., Schedule D – investment schedules; Schedule F – reinsurance issues; and Schedule P – loss triangles, etc.).

14. Given the importance of accurate financial reporting to the financial oversight process, regulators pay particular attention to accuracy. Actuarial opinions on major components of an insurer's financial statements (asset adequacy[2] and claim/loss/premium reserves) are required to ensure the adequacy and/or reasonableness of reserves. The independent financial audit helps to provide assurances that all material aspects of the insurer's financial reporting are accurate.

[1] *Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to Be in Hazardous Financial Condition* (#385).

[2] Asset adequacy analysis is a model-based determination of various product groups under current and realistic scenarios that determine the amount of assets on the valuation date needed to fund prospective benefits and related expenses.

15. Generally, regulators judge financial condition based on the company's financial reporting, accompanying audits and actuarial opinions. As discussed later in this section, there are numerous financial analysis tools, including public calculations, such as NAIC's Insurance Regulatory Information System (IRIS) ratios and more detailed non-public calculations included in the Financial Analysis Solvency Tools (FAST) system that highlight "red flags." These non-public calculations are possible because of the detailed, validated and uniform financial reporting, allowing for identification of risk concentrations and anomalies.

16. Given that assets' and liabilities' valuations and reserves are a substantial portion of insurer risks, reserve analyses include actuarial opinions and, for life insurers, asset valuation reserves and interest maintenance reserves to help to ensure consistent asset and liability valuation.

Financial Surveillance

17. In assessing the financial condition of an insurer, the overall goal is to identify potential adverse financial indicators as quickly as possible, to evaluate and understand such problems more effectively, and to develop appropriate corrective action plans sooner, thus potentially decreasing the frequency and severity of insolvencies. Regulators conduct a risk-focused surveillance of the insurer's financial reports that includes financial analysis, risk-focused examination and supervisory plan development

Stage 3: Regulatory Backstops

18. As a final back-stop in the U.S. financial oversight process, state insurance regulators have the U.S. RBC calculation and analysis.[3] Regulators developed RBC to supplement the fixed minimum capital and surplus requirements which vary by line of business (higher for casualty lines, and higher for multiple lines over mono-line companies) and do not sufficiently account for differences in size, risks, or financial conditions among insurers. Although the RBC formula is the same for companies in a similar line of business, the specific calculation for each company reflects the particular risks unique to that specific company. This is because a company's RBC is calculated by applying factors to various asset, premium and reserve items. The factor is higher for those items with greater underlying risk and lower for less risky items.

19. RBC strengthens the regulatory safety net in the U.S. system by recognizing a company's different size, financial condition, and types of risks assumed. More important, regulators created RBC as a legal authority to provide for timely regulatory action with minimum court involvement when a company triggers an RBC intervention level.

20. The RBC formula is a process whereby the insurer calculates a Total Adjusted Capital (TAC), first by identifying dollar amounts of specific risk exposures in specific risk categories (i.e. direct/indirect affiliate/subsidiary insurer risks, fixed income risks, equity risks, credit risks, underwriting risks, etc.). An Authorized Control Level (ACL) amount is then established through many pages of calculations whereby individual risks are multiplied by risk factors to create RBC charges, the RBC charges are segregated into risk components based upon correlation, and a covariance calculation is used to account for the absence of perfect correlation among all risks.

[3] *Risk-Based Capital (RBC) for Insurers Model Act* (#312).

Once the ACL is calculated, the trigger points for the regulator's four action and control levels are then determined as a percentage of the ACL number: Company Action Level is 200% of ACL, Regulatory Action Level is 150% of ACL, ACL is the third level, and Mandatory Control Level is 70% of the ACL. Then the TAC is compared to the four regulatory action and control levels, and, in accordance with the RBC regulatory framework, all state statutes include specific actions that the regulator and insurer must take at each level to resolve risk exposures and capital inadequacies. These intervention levels are established to require regulatory action, but the regulator may otherwise consider a company to be in hazardous financial condition despite a specific RBC level finding.

21. Rounding out the policyholder protections, if a financially impaired insurance company is unable to pay its insurance claims, a state guaranty fund will pay them, subject to certain limits.

Oversight of Hazardous Financial Condition: Tools and Resources

22. In assessing the financial condition of an insurer, the overall goal is to identify potential adverse financial indicators as quickly as possible; evaluate and understand such problems more effectively; and develop appropriate corrective action plans sooner, thus potentially decreasing the frequency and severity of insolvencies. The U.S. solvency oversight framework is not designed to eliminate all insolvencies but, rather, to minimize the number of insolvencies and their corresponding impact on policyholders and claimants. Regulators conduct a risk-focused surveillance of insurers' financial reports that includes financial analysis, financial examination and supervisory plan development.

Financial Analysis

23. NAIC tools and resources (e.g., "FAST" scores and handbooks) supplement individual state regulatory efforts. FAST is a collection of analytical solvency tools and databases designed to provide state insurance departments with an integrated approach to reviewing the financial condition of insurers operating in their respective jurisdictions. FAST is intended to assist regulators in prioritizing resources to those insurers in greatest need of regulatory attention. The creation and development of sophisticated and comprehensive financial tools and benchmarks (through data management evolved from personal knowledge of troubled companies) encapsulate various categories, including leverage, asset quality, liquidity, and insurer operations.

24. Three key tools within the FAST System include:[4]

    1) **Insurance Regulatory Information System (IRIS)**: IRIS has served as a baseline solvency screening system for the NAIC and state regulators since the mid-1970s. Its first, "statistical phase" involves calculating a series of financial ratios for each insurer based on statutory annual statement data. Because the ratios by themselves are not indicative of adverse financial conditions, an experienced team of state insurance examiners and analysts then reviews the IRIS ratio results and other financial information through the second "analytical phase."

    In this second phase, the Analyst Team reviews a computer-selected priority listing of insurers that may be experiencing weak or declining financial results and meets to identify insurers that appear to require immediate regulatory attention. The team then validates the listing based on

further analysis of those companies, and provides a brief synopsis of its findings in a document that only state insurance regulators and authorized NAIC staff can access.

2) **Scoring System**: The NAIC Scoring System is based on several financial ratios and is similar in concept to IRIS ratios, but provides results both on an annual and a quarterly basis. The Scoring System also includes a broader range of financial ratios and assigns a score to each ratio based on the level of solvency concern each result generates. The Scoring System results and scores are available only to state insurance regulators and authorized NAIC staff.

3) **Insurer Profiles System**: Finally, the Insurer Profiles System produces quarterly and annual profiles on property and casualty, life, health and fraternal insurers that include either a quarterly or an annual five-year summary of a company's financial position. The Insurer Profile reports provide not only a snapshot of the company's statutory financial statement, but also include analytical tools such as financial ratios and industry aggregate information for analytical review. Insurer Profile reports also assist state insurance department analysts in identifying unusual fluctuations, trends or changes in the mix of an insurer's assets, liabilities, capital and surplus, and operations.

25. To prioritize resources, regulators use the Analyst Team System (ATS), a multi-tiered solvency surveillance process. ATS utilizes FAST including: the Annual Scoring System, IRIS ratios, RBC and selected information from the Annual Statement Blanks. The primary goal of ATS is to use many of solvency tools working together to identify insurance companies (all of the insurance companies that file Annual Statement Blanks with the NAIC) that appear to require immediate regulatory attention.

26. State regulators have also developed an NAIC *Financial Analysis Handbook* (Handbook) to advise use of a "stair-step" approach that directs analysts to perform more in-depth analysis commensurate with the financial strength, prospective risks and complexity of each insurer. The Handbook requires regulators to use many analytical tools, databases and processes in completing their quarterly analysis of insurers (such as ratio analysis and review of the actuarial opinion, audited statutory financial statements, holding company filings, and the management discussions and analysis filings). The Handbook provides a means for insurance departments to more accurately identify companies experiencing financial problems or posing the greatest potential for developing such problems. Furthermore, the Handbook provides guidance for insurance departments to define and evaluate particular areas of concern in troubled companies.

27. Ensuring a nationwide system of checks and balances, the NAIC, specifically the NAIC Financial Analysis (E) Working Group (FAWG), offers a layer of peer review for each regulator's solvency monitoring efforts, thus ensuring that experienced state regulator colleagues improve and enhance state regulator judgments regarding a company's financial condition. FAWG is comprised of the top financial regulators from around the country. These individuals, who are seasoned regulatory professionals, serve as an advisory panel and form of peer review for the home state's actions.

28. For over two decades, the NAIC FAWG has ensured that state insurance financial regulators have shared information and ideas to identify, discuss, and monitor potentially troubled insurers and nationally significant insurance groups[5]. For the past two decades, FAWG has identified market trends and emerging financial issues in the insurance sector and has leveraged the expertise of select

chief financial regulators from around the U.S. to provide an additional layer of solvency assessment to our national system of state-based regulation.

29. While FAWG does not have specific regulatory authority, no state has ever refused a FAWG recommendation. The U.S. state-based system of supervision fosters healthy peer review that creates peer pressure to be diligent and vigilant domiciliary regulators, knowing that each jurisdiction where a company is licensed has the separate authority to act on a FAWG recommendation if the domiciliary state regulator does not.

30. FAWG's mission has three overriding themes:

    1. Identify nationally significant insurers/groups that exhibit characteristics of trending towards financial trouble;
    2. Interact with domiciliary regulators and lead states in order to assist and advise on appropriate regulatory strategies, methods, and actions; and,
    3. Encourage, promote and support coordinated, multi-state efforts in addressing solvency issues.

31. FAWG's activities, oversight and insurer review includes, but is not limited to:

    - Identifying companies that are outliers when compared with industry benchmarks although, state regulators may refer some companies to FAWG for review.
    - Develop communication for the financial staff and commissioner for the state of domicile for the insurer/group under review; including a description of the issue, questions and suggestions on regulatory options.
    - Review of domestic or lead state regulator responses on identified issues and questions.
    - Consider whether responses identify a need for further regulatory action or FAWG intervention — including requesting the domiciliary regulator to answer questions and make a presentation to FAWG and other regulators.
    - Consider whether to request the formation of a FAWG subgroup for certain insurers or groups to facilitate regular communication and collaboration with applicable regulators although state regulators generally proactively communicate with the most relevant regulators for each situation on their own.

32. Through the FAWG forum, individual states work together to support and guide fellow regulators for the benefit of the whole in an entirely open (among regulators) yet confidential (not public) process. FAWG also reviews and considers trends occurring within the industry, often concentrating on particular market segments, product, exposure, or other problem that have the potential of impacting the solvency of the overall industry.

Financial Examination

33. U.S. regulators carry out periodic comprehensive risk-focused, on-site examinations in which they evaluate the insurer's corporate governance, management oversight and financial strength, including risk identification and mitigation systems both on a current and prospective basis, assessing the reported financial results through the financial examination process to determine the insurer's compliance with legal requirements.

34. Examinations consist of a process to identify and assess risk and assess the adequacy and effectiveness of strategies/controls used to mitigate risk. The process includes a determination of the quality and reliability of the corporate governance structure, risk management programs and verification of specific portions of the financial statements, limited-scope reviews and reviews of specific insurer operations.

35. Financial examiners evaluate the insurer's current strengths and weaknesses (e.g., board of directors, risk-management processes, audit function, information technology function, compliance with laws/regulations, etc.) and prospective risk indications (e.g., business growth, earnings, capital, management competency and succession, future challenges, etc.).

36. Regulators then document the results of financial condition examinations in a public examination report that assesses the insurer's financial condition and sets forth findings of fact with regard to any material adverse findings disclosed by the examination. Examination reports may also include required corrective actions, improvements and/or recommendations.

37. In between full-scope examinations, additional examinations might be needed that are limited in scope to review specific insurer operations.

Supervisory Plan

38. At least once a year, regulators develop a Supervisory Plan for each domestic insurer using the results of recent examinations and the annual and quarterly analysis process to outline the type of surveillance planned, the resources dedicated to the oversight and the coordination with other states. At the end of a financial examination, the financial examiner will document appropriate future supervisory plans for each insurer (e.g., earlier statutory exams, limited-scope exams, key areas for financial analysis monitoring, etc.). This Supervisory Plan provides an oversight link between financial examination and financial analysis processes.

Conclusion

39. U.S. insurance regulators are keenly aware of their regulatory system's unique structure, and have developed tools and financial regulatory processes, adopted by all jurisdictions (such as peer review and FAWG oversight), to help ensure that regulatory resources are used in an efficient and cost-effective manner, not only to protect consumers but also to maintain the solvency of regulated entities. U.S. insurance regulators utilize a number of coordinated resources to assess the financial strength and condition of insurers — from small single-state insurers to large multi-state groups — to verify the consistency, integrity and success of the supervisory approach.

Section 4

Effective and Efficient Markets Protect Consumers – Analysis of U.S. Property/Casualty Markets

U.S. Insurance Regulatory Mission

1. While the policyholder is the focal point of the U.S. Insurance Regulatory Mission, the mission is mindful that regulatory actions and decisions will have an impact on the operation of insurance markets and their efficiency. Because it is felt that "facilitating the financial stability and reliability of insurance institutions for an effective and efficient market place for insurance products" is in the best interests of policyholders (e.g., cost efficiencies and product innovation), this is not considered to be a separate and distinct or secondary mission, but is considered to support a focus on the policyholder.

2. Insurance regulators support the best way to facilitate an effective and efficient market place for insurance products and achieve cost efficiencies and product innovation is by cultivating a competitive market place.

Measuring Competitiveness of Markets

3. Economists often use the structure-conduct-performance hypothesis as a standard way to evaluate markets. This hypothesis states that market structure affects market conduct which in turn affects market performance. Market structure can be presented through market share, size of firms, number of firms, concentration measures and entry and exit rates. Market conduct refers to the degree of independence firms have in setting prices and output levels. Market performance for insurance markets can be measured through loss ratios, profit rates and insolvency rates. An evaluation of these factors can help one analyze insurance markets. A large number of sellers, along with free entry and exit lead to independent pricing and optimal market performance.

4. Insurance regulators strive for workable competition where insurance markets are relatively unconcentrated, barriers to entry are low, profits are comparatively moderate and inefficiencies are limited. A highly competitive market will lead to efficient, optimal outputs and available, innovative products. Under the U.S. capitalistic framework, companies are allowed to enter and exit markets and some will succeed and profit and others may fail. Financial insurance regulation is meant not to prevent companies from failing, but to protect policyholders by ensuring that claims are paid.

5. An evaluation of U.S. insurance markets shows that the vast majority of insurance markets in the vast majority of geographic regions are highly competitive with multiple writers, relatively low concentration and reasonable profitability rates. The insurance-related benchmarks in the following section are presented as a way to evaluate the competitiveness of insurance markets.

Market Shares

6. Market shares can be used to determine the degree of concentration found in markets. When looking at concentration rates, it is important to evaluate insurance markets based on group status because insurance entities within a group are not competing against each other. There are several ways to look at concentration rates. One common measure used by economists is the four-firm concentration ratio which measures the market share of the four largest groups. Ratios below 50% are considered desirable in terms of competitiveness of the market.

7. A more robust tool to measure concentration is the Herfindahl-Hirschman Index (HHI). The HHI is calculated by summing the squares of the market shares (as a percent) of all groups in the market. Although there is no precise point at which the HHI indicates that a market or industry is concentrated highly enough to restrict competition, the Department of Justice has developed guidelines with regard to corporate mergers. Under these guidelines, if a merger of companies in a given market causes the HHI to rise above 1,800, the market is considered highly concentrated. If, after the merger, the HHI is between 1,000 and 1,800, the market is considered moderately concentrated, and an HHI less than 1,000 is considered not concentrated. Since these numbers are guidelines, judgment must be used to interpret what information the HHIs provide for a particular market.

8. Using these two measures, the data shows that nationally there is little concentration in property/casualty insurance markets, especially within the larger lines of business (Table 1, Table 2 and Table 3). The states show slightly more concentrated markets but the data does not exhibit cause for concern. In addition, the states benefit from the fact that there is ease of entry by insurers that may be operating in neighboring states and could easily begin writing in a new state. Life, annuity, and health markets similarly show limited concentration in terms of the four-firm ratios. The market share of the four largest groups writing life insurance is 31.4%; 36.4% for the four largest groups writing annuity business; and 33.2% for the four largest groups writing health insurance.

Table 1

U.S. Property/Casualty Insurance – Measures of Competitiveness
National Data (2011)

	Market Share Largest Four Groups	HHI	Number of Sellers (Groups)	Return on Net Worth 10 Year Mean	Number of Entries Last 5 Years	Number of Exits Last 5 Years
Commercial Auto Total	27.54%	302	110	9.78%	26	25
Commercial Multiple Peril	27.94%	338	105	9.13%	24	23
Private Passenger Auto Total	45.94%	716	77	7.66%	10	12
Homeowners Multiple Peril	42.50%	705	97	5.35%	23	26

National data taken from NAIC's *2011 Competition Database Report.*

Table 2

U.S. Property/Casualty Insurance – Overall Market Trends									
	Premiums Written	Market Shares: Four Largest Groups	HHI	# of Sellers (Groups)	# of Entries: Last 5 Years	# of Exits: Last 5 Years	Surplus Lines Market Shares: Latest Year	Surplus Lines Market Shares: 5-Year Mean	Return on Net Worth: 10-Year Mean
2011	500,735,806,340	26.61%	309	121	26	27	5.39%	5.98%	7.66%
2010	483,186,256,485	27.18%	319	121	25	28	5.52%	6.04%	7.12%
2009	481,448,809,393	27.51%	318	117	27	34	5.60%	6.13%	6.96%
2008	496,827,804,257	27.62%	314	118	27	32	5.63%	5.90%	7.00%
2007	509,000,957,021	28.29%	307	121	26	28	5.81%	6.01%	7.63%
2006	503,523,640,554	28.53%	310	123	32	27	6.20%	5.88%	7.65%

Source: NAIC *2011 Competition Database Report.*

Table 3

State	HHI - All P/C Companies	State	HHI - All P/C Companies
AL	**548**	**MO**	**443**
AK	**685**	**MT**	**495**
AZ	**447**	**NE**	**389**
AR	**423**	**NV**	**451**
CA	**395**	**NH**	**402**
CO	**471**	**NJ**	**401**
CT	**408**	**NM**	**545**
DE	**868**	**NY**	**359**
DC	**465**	**NC**	**418**
FL	**349**	**ND**	**541**
GA	**468**	**OH**	**403**
HI	**501**	**OK**	**478**
ID	**437**	**OR**	**584**
IL	**429**	**PA**	**412**
IN	**379**	**RI**	**378**
IA	**344**	**SC**	**513**
KS	**385**	**SD**	**401**
KY	**564**	**TN**	**512**
LA	**540**	**TX**	**417**
ME	**385**	**UT**	**436**
MD	**524**	**VT**	**348**
MA	**448**	**VA**	**464**
MI	**466**	**WA**	**476**

MN	387	WV	600
MS	495	WI	334
		WY	588

Source: NAIC's *2011 Competition Database Report.*

Entries/Exits

9. Those analyzing competition are usually interested in how many insurance groups are participating in a market, as well as how many insurance groups are deciding to enter or leave a market. A market demonstrating a steady increase in the number of groups providing insurance (more groups enter the market than exit) can be considered a strong market where insurers see an opportunity to make a profit. Conversely, markets where more groups are exiting the market than entering may indicate that insurers are unable to earn a profit sufficient to justify a continued presence. Insurance data show that insurers are moving into and out of markets, without either entry or exit dominating the equation (Tables 1 & 2).

Residual Markets

10. When insurance is limited or not available through the voluntary market, a consumer may turn to the residual (e.g., assigned risk or other shared market plans) or surplus lines (i.e., unlicensed companies for hard-to-place risks) markets for coverage. When there is growth in these alternative markets, there may be a declining number of sellers in the standard market or a limited capacity to add new business. Data show that in most lines and most states, the residual markets are quite small and have fallen in recent years, indicating that the primary market is competitive with insurance relatively available and affordable (Table 2).

Profitability Rates

11. Insurer profitability results can be examined to determine whether a market is attractive to insurers to enter, thereby creating greater competition, or unattractive, causing insurers that are in the market to leave. Persistently high levels of profitability may indicate that a market is failing to attract competitors, thus enabling non-competitive rates of return to be earned. Alternatively, persistently low levels of profitability may indicate that insurers have difficulty estimating losses and/or are unable to set premium rates at adequate levels. Long-term profitability rates for the property/casualty insurance industry are relatively low, particularly when compared with other industries (Table 4).

Table 4

December 2011

Comparison of Rates of Return on Net Worth

(In Percent)

Year	(1) NAIC Property/ Casualty Insurance	(2) Fortune Magazine All Industry
2002	1.7	10.2
2003	8.2	12.6
2004	8.0	13.9
2005	8.3	14.9
2006	12.2	15.4
2007	9.7	15.2
2008	2.2	13.1
2009	5.7	10.5
2010	6.0	12.7
2011	3.5	14.3
2002 – 2011 Averages	6.6	13.3

(1) Returns are calculated using mean net worth.

(2) Returns are calculated using year-end net worth.

Source: NAIC *Report on Profitability by Line by State in 2011.*

U.S. Markets are Competitive

12. Insurance markets have numerous companies ready to write in most lines of business in all states. The bulk of the business written is done so by large groups (writing more than $1 billion in premium) and large individual insurers (writing more than $500 million in premiums and not in a large group)(Table 5, Chart 1). The size of these competing companies would allow them to seamlessly step in and write business of an insurer that moved out of the market.

Table 5

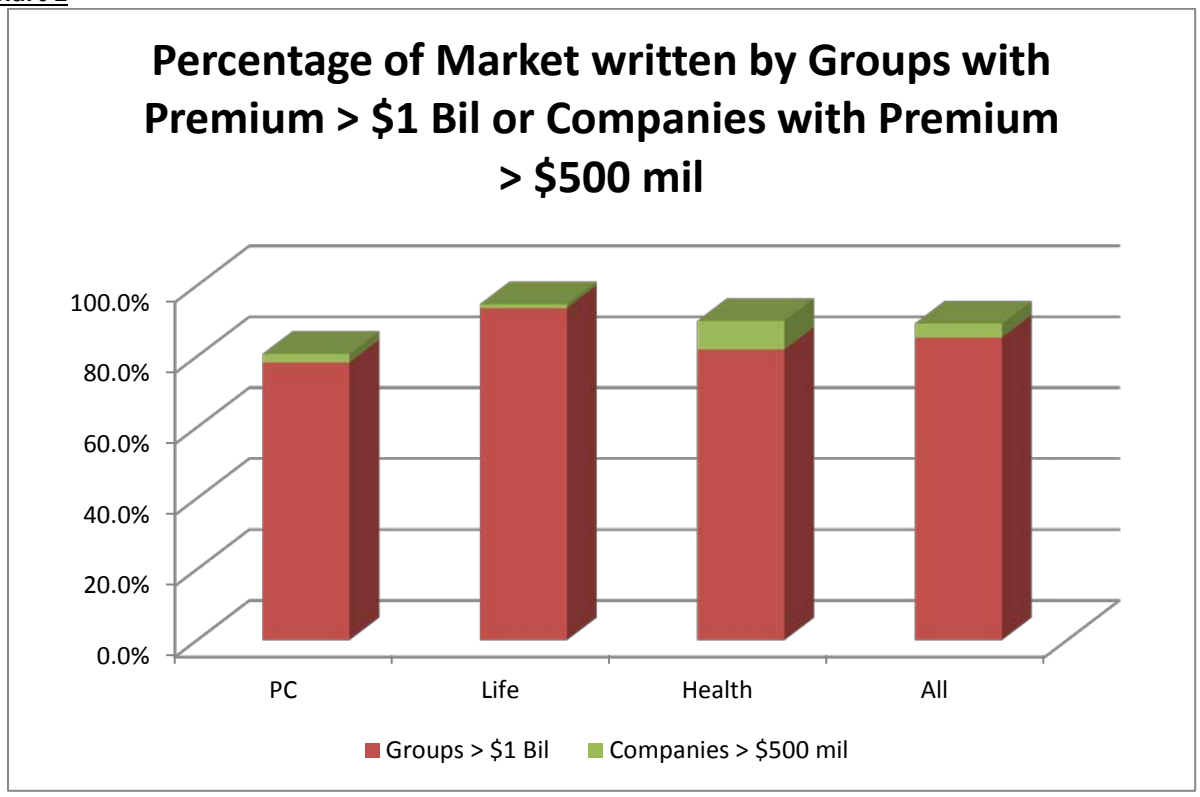
Percentage of Insurance Markets Written by Size of Group or Company, 2011

	Groups > $1 billion or Cos. > $500 million	Groups > $1 billion	Additional Cos. > $500 mil not in a Group >$1 B
PC	81.4%	78.9%	2.6%
Life	95.3%	93.8%	1.5%
Health	90.9%	82.3%	8.6%
All	90.0%	85.7%	4.3%

Size of Group/Company Determined by Direct Written Premium

Source: Data calculated from NAIC *2011 Market Share Reports.*

Chart 1



Source: Data calculated from NAIC *2011 Market Share Reports.*

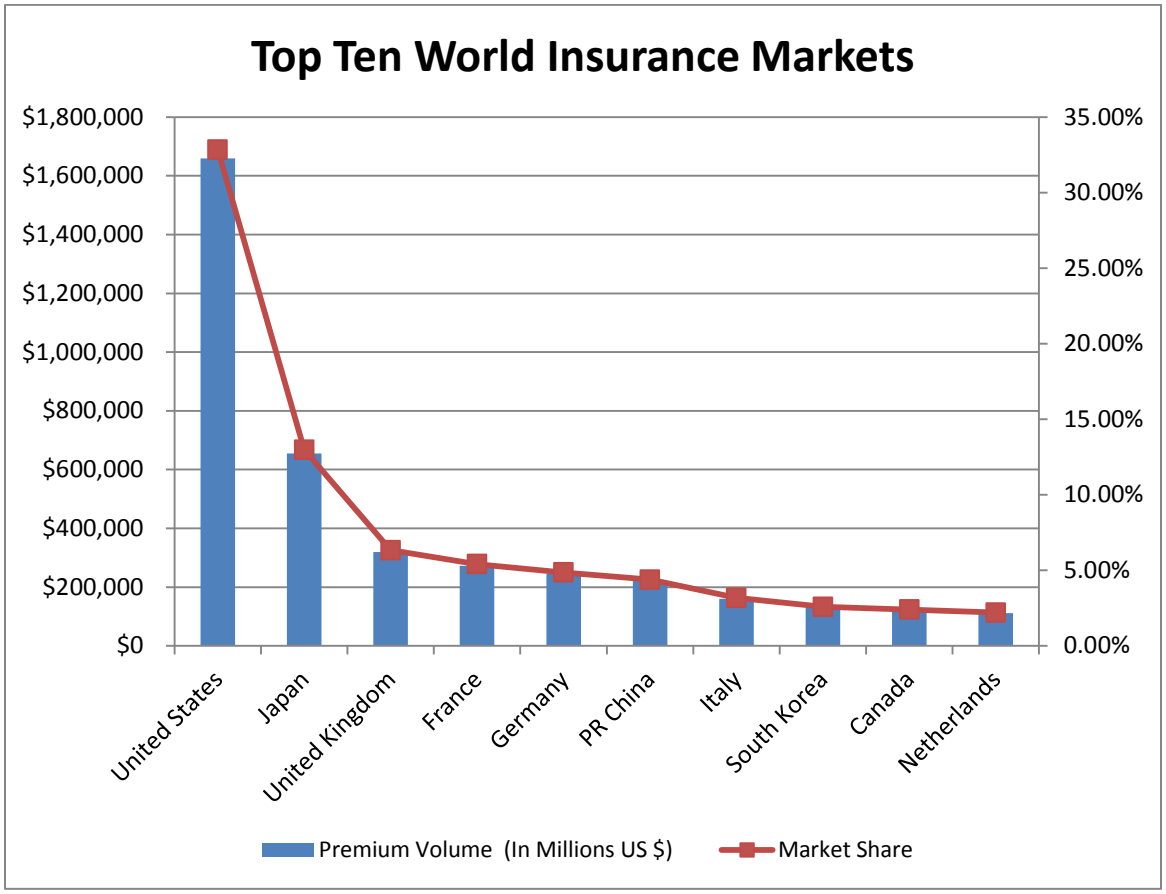
13. The structure and performance criteria for insurance markets confirm competitiveness at both the national and state level. Markets have large numbers of writers and the degree of market concentration falls below that which economists would typically use to identify preconditions necessary to show a lack of competition. The criteria described above provide the framework necessary for competitive markets. U.S. insurance markets are competitive and therefore the failure of a company in a U.S. insurance market can typically be absorbed by other market players without market disruption.

Size of U.S. Insurance Market

14. Insurance markets in the United States are large, competitive and well-functioning. Regulators continually ensure that markets remain competitive as this results in the most efficient markets for the ultimate benefit of consumers.

15. The overall insurance market in the United States is nearly three times larger than that of the next largest insurance market in the world. With $1.6 trillion in overall premium volume in 2011, the U.S. market makes up 33% of the world market, while Japan is the next largest with $655 billion in premiums (Chart 2). When individual states are compared to foreign countries, the states make up five of the world's 14 largest insurance markets and 24 of the world's top 50 insurance markets (Table 6).

Chart 2



Sources: NAIC Financial Data Repository, NAIC IID Filings, US residual market mechanisms, health insurers or captives not filing to FDR, and SwissRe Sigma No. 2/2010 for the remainder.

Table 6

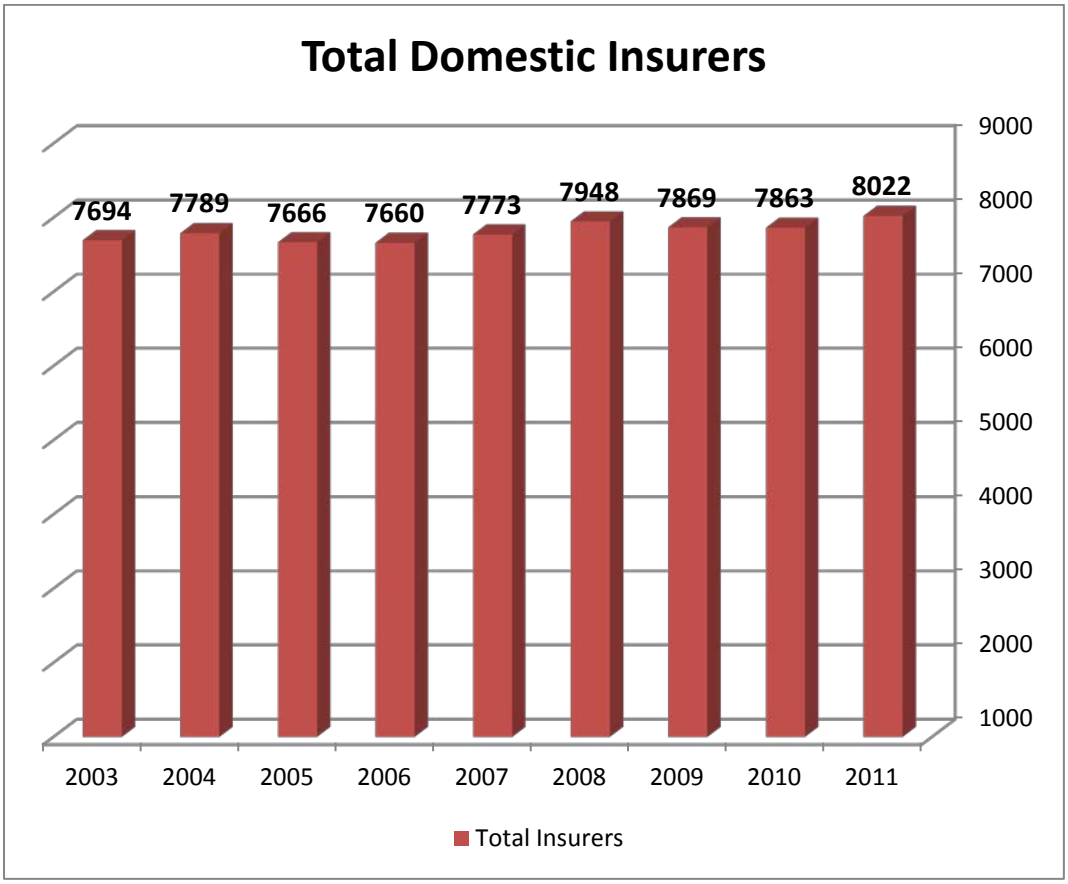
Rank	Jurisdiction	2011 Premium Volume (In Millions US $)	Market Share	Rank	Jurisdiction	2011 Premium Volume (In Millions US $)	Market Share
1	Japan	$655,408	12.98%	26	Ireland	$52,250	1.03%
2	United Kingdom	$319,553	6.33%	27	Massachusetts	$44,215	0.88%
3	France	$273,112	5.41%	28	Russia	$43,257	0.86%
4	Germany	$245,162	4.86%	29	Georgia	$42,441	0.84%
5	PR China	$221,858	4.39%	30	Sweden	$42,111	0.83%
6	California	$220,093	4.36%	31	Belgium	$41,087	0.81%
7	Italy	$160,514	3.18%	32	North Carolina	$37,417	0.74%
8	New York	$133,823	2.65%	33	Virginia	$37,052	0.73%
9	South Korea	$130,383	2.58%	34	Minnesota	$33,208	0.66%
10	Canada	$121,213	2.40%	35	Washington	$32,937	0.65%

11	Netherlands	$110,931	2.20%	36	Denmark	$32,691	0.65%
12	Florida	$108,122	2.14%	37	Tennessee	$32,161	0.64%
13	Texas	$106,296	2.11%	38	Wisconsin	$32,152	0.64%
14	Pennsylvania	$91,852	1.82%	39	Maryland	$30,172	0.60%
15	Australia	$89,086	1.76%	40	Missouri	$29,977	0.59%
16	Spain	$79,987	1.58%	41	Hong Kong	$27,850	0.55%
17	Taiwan	$78,416	1.55%	42	Indiana	$26,683	0.53%
18	Brazil	$78,287	1.55%	43	Colorado	$26,444	0.52%
19	India	$72,628	1.44%	44	Finland	$25,404	0.50%
20	Switzerland	$63,576	1.26%	45	Arizona	$25,216	0.50%
21	Illinois	$61,489	1.22%	46	Luxembourg	$23,489	0.47%
22	Ohio	$59,416	1.18%	47	Louisiana	$23,430	0.46%
23	New Jersey	$56,541	1.12%	48	Austria	$23,051	0.46%
24	Michigan	$52,484	1.04%	49	Connecticut	$22,672	0.45%
25	South Africa	$52,376	1.04%	50	Norway	$22,638	0.45%

Sources: NAIC Financial Data Repository, NAIC IID Filings, U.S. residual market mechanisms, health insurers or captives not filing to FDR, and SwissRe Sigma No. 2/2010 for the remainder.

16. More than 8,000 domestic insurers — including captives, risk retention groups, and state mutuals — operate in U.S. markets (Chart 3). In terms of insurance markets on a state level, the average state has more than 400 life/health insurers and more than 750 property/casualty insurers licensed to write business in their state (Table 7). The presence of a large number of insurers with the capacity to take on new business ensures that markets will be well functioning as insurers can move in and out of markets without causing severe dislocations. Most insurance markets in the U.S. are highly competitive and insurers aggressively seek market share by competing on product and price.

Chart 3



Source: NAIC *2011 Insurance Department Resources Report.*

Table 7

Number of Licensed Insurers by Type - 2011					
	Life/	Property/			
State	Health	Casualty	Health	Fraternal	Title
Alabama	444	820	2	11	18
Alaska	306	395	14	5	7
Arizona	484	921	23	26	18
Arkansas	486	865	11	15	16
California	420	678	0	40	9
Colorado	459	837	3	33	18
Connecticut	364	702	0	39	14
Delaware	427	761	12	18	19
Dist. of Columbia	458	767	9	25	20
Florida	422	931	25	39	19
Georgia	485	974	0	13	22

Hawaii	375	568	23	7	10
Idaho	463	821	6	13	12
Illinois	453	896	12	42	0
Indiana	483	946	18	46	25
Iowa	399	865	33	28	0
Kansas	511	983	11	29	18
Kentucky	452	902	44	18	19
Louisiana	465	798	34	21	14
Maine	342	622	3	13	13
Maryland	427	864	49	26	19
Massachusetts	383	668	2	30	16
Michigan	429	788	1	54	14
Minnesota	387	798	23	33	18
Mississippi	485	852	5	11	18
Missouri	478	878	13	29	18
Montana	440	826	28	25	14
Nebraska	464	866	3	31	11
Nevada	468	863	11	13	18
New Hampshire	310	571	21	16	11
New Jersey	381	726	3	40	19
New Mexico	481	772	17	19	19
New York	88	709	15	34	15
North Carolina	458	816	3	14	16
North Dakota	469	805	3	21	14
Ohio	458	838	7	48	20
Oklahoma	489	873	4	19	15
Oregon	465	882	3	21	11
Pennsylvania	458	887	2	39	20
Puerto Rico	98	134	0	1	6
Rhode Island	386	716	1	26	14
South Carolina	456	1,071	38	12	17
South Dakota	296	857	188	22	15
Tennessee	488	924	4	14	20
Texas	470	922	2	24	18
Utah	470	869	0	16	15
Vermont	341	637	2	15	11
Virginia	430	890	43	24	18
Washington	430	846	15	21	13
West Virginia	462	827	9	28	16
Wisconsin	400	836	28	39	18
Wyoming	430	675	1	14	13

Average	**413**	**784**	**16**	**24**	**15**

Source: NAIC *2011 Insurance Department Resources Report.*

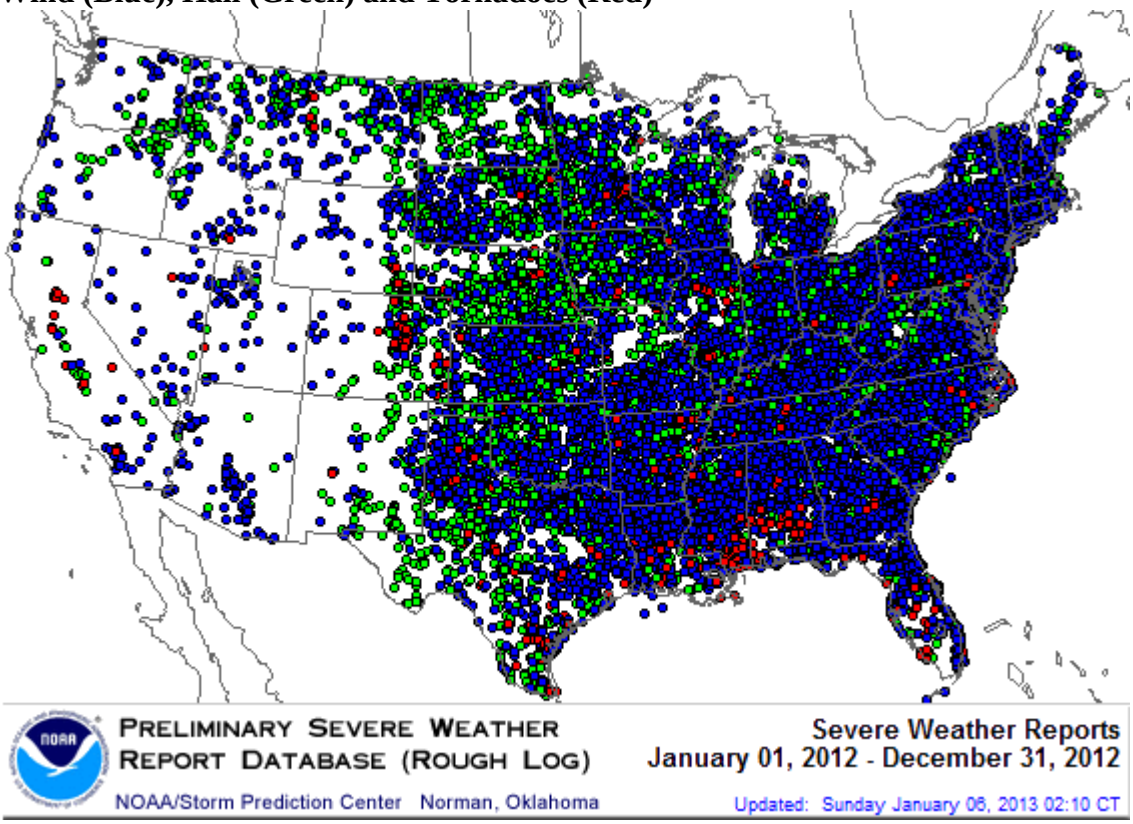
U.S. Markets are Regulated by the States Due to Local Differences

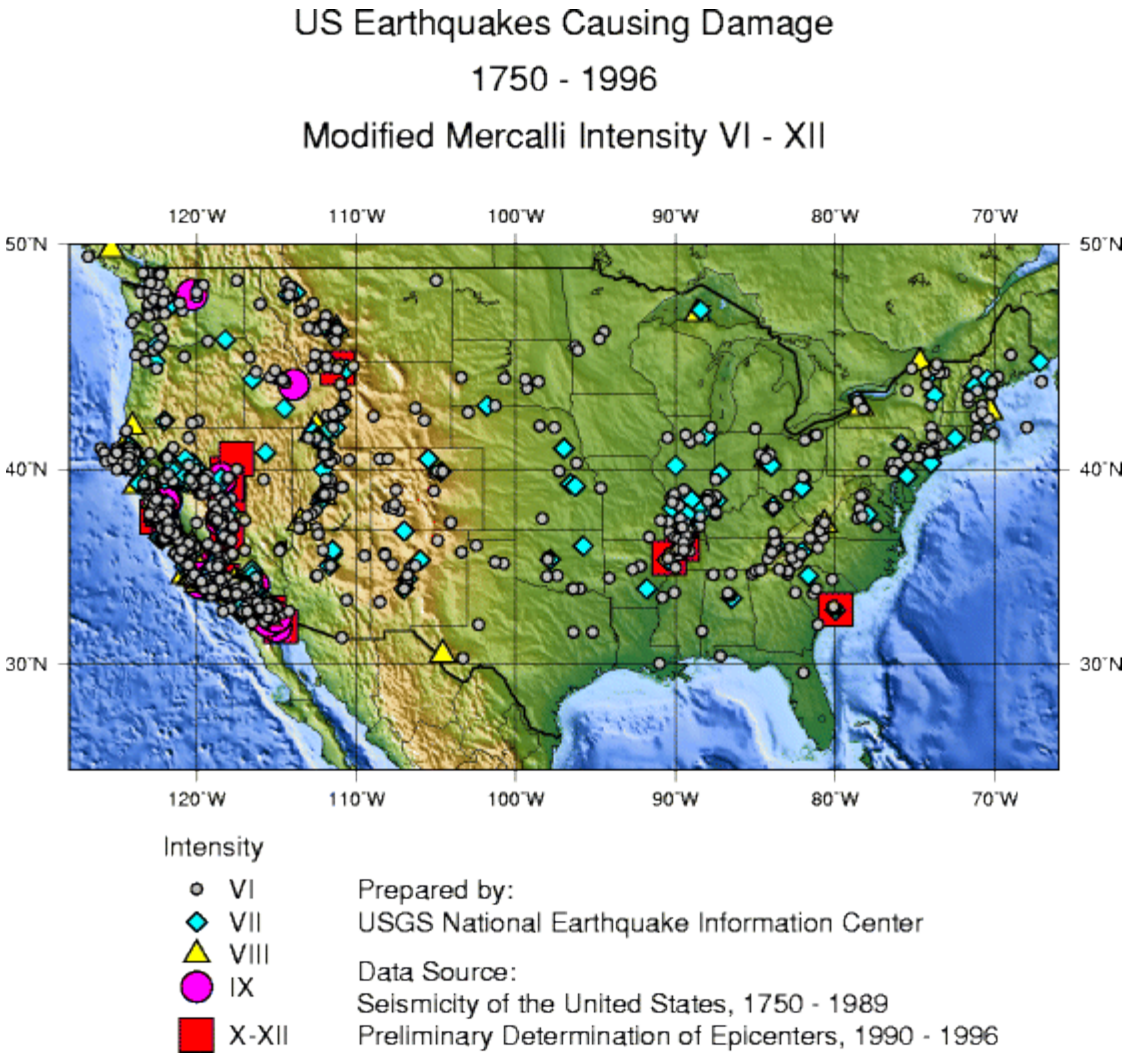
17. Insurance markets in the United States are regulated on the state level rather than a federal level, partly due to Constitutional reasons and prior decisions made by U.S. courts, but also due to practical reasons because it makes functional sense. The U.S. is large geographically and has differences between regions and states due to localized traditions, cultures, population densities and legal concepts. It is important to keep in mind that many state markets are as large or are larger than many foreign countries.

18. Effective consumer protection that focuses on local needs is the hallmark of state insurance regulation. Regulators at the state level understand the needs and special circumstances of consumers and insurers at the local level and are best able to properly address those unique circumstances.

19. Due to geographical differences, states experience unique perils within their individual markets. The following maps show that, depending on the state, catastrophic perils within a region might include any combination of tornadoes, wind, hail and earthquakes. States must focus their regulatory structure differently according to the perils contained within each state.

Wind (Blue), Hail (Green) and Tornadoes (Red)





20. In terms of factors affecting life and health insurance, states differ dramatically in population densities, ratios of urban and rural populations, age distributions, racial makeup and the overall health of the population. These factors make each state unique and call for different regulatory structures and rules.

21. The states have chosen to enact different statutory workers' compensation laws that determine the amount and forms of compensation to which employees are entitled, based upon that state's own preferences. State laws concerning automobile insurance differ because each state's legislature has enacted their own requirements on minimum levels of liability insurance and whether personal injury protection is mandatory. Each state's legislature determines the needs in that state and creates requirements based upon that state's citizens.

22. An attempt to create a "one-size-fits-all" regulatory framework for all functions of regulation (beyond solvency) does not make sense due to the great differences found between regions

and states. This competitive-market framework complements solvency regulation, which is a national system of state-based regulation where the regulatory responsibility for insurer solvency monitoring rests with the state insurance regulator.

23. The marketplace is generally the best regulator of insurance-related activity. However, there are instances where the marketplace does not respond in the best interests of its participants. A strong and reasonable market regulation program, balanced with those of financial solvency, will discover these situations and allow regulators to respond and act appropriately to change company behavior.

24. Because the terms of insurance policies are complicated, market regulation seeks to ensure that consumers understand the products being purchased and the products provide a minimum level of protection through the use of disclosures and policy review. In addition to the review of products prior to their sale, market regulation ensures that companies conduct their business according to state laws, regulations and policy provisions through the review of a company's marketing and sales practices, underwriting and rating practices, and claim-handling practices. The review of company practices is coupled with the regulation of agents and brokers selling, soliciting and negotiating insurance through background checks, examinations, and continuing education requirements. This type of regulation helps ensure a minimum level of competency of agents and brokers and helps eliminate the potential for market regulation issues and the disruption of a company's product availability and income stream. Finally, market regulation provides a continuous regulatory link to assisting consumers and monitoring companies' behavior through ongoing consumer assistance accomplished through the daily processing of consumer inquiries and complaints.

25. Just as solvency regulation aids the policyholder by ensuring funds are available to pay claims, the existence of a competitive market helps the consumer by ensuring a vibrant, well-functioning efficient marketplace consisting of available, innovative products.

Section 5

Solvency Modernization Initiative: The Future of U.S. Financial Insurance Regulation

1. The Solvency Modernization Initiative (SMI) is a critical self-examination in the continuous effort to improve the U.S. insurance financial regulatory framework. The U.S. financial regulatory system, using general authority and exception-based rule setting (vs. a detailed/explicit authority-based system), has been utilized for years and has been very effective and successful, without the need for intrusive regulation for financially sound companies.

2. U.S. insurance regulators support improving on an existing and time-tested regulatory framework, where the cost of regulation is reasonable and not excessive, rather than starting from scratch with all new, yet-to-be proven theories and more intrusive regulation.

3. The SMI critical self-examination includes an evaluation of lessons learned from the 2007–2008 global financial crisis, a focus on meeting the needs of the U.S. marketplace in an increasingly interconnected financial environment, and a review of international developments regarding insurance supervision, banking supervision and international accounting standards, as well as their potential use in U.S. insurance regulation.

4. Priorities in the SMI include the following:

    - Create a document articulating the U.S. insurance regulatory system, to communicate to domestic and international audiences.

    - Examine international developments (e.g., in the area of accounting and insurance supervision) and their potential use in U.S. insurance regulation.

    - Comply with the International Association of Insurance Supervisors (IAIS) Insurance Core Principles (ICPs) to the full extent appropriate in the U.S. system to aid assessment in the International Monetary Fund's (IMF) Financial Sector Assessment Program (FSAP).

    - Apply lessons learned from the global financial crisis, especially in regard to group supervision, while recognizing that the recent financial crisis was not triggered by insurance matters.

5. The SMI focuses on the following key components of the solvency framework: capital requirements, governance and risk management, group supervision, statutory accounting and financial reporting, and reinsurance. With exception of international accounting, our aim is to achieve almost all SMI policy decisions by mid-2013, with implementation of many changes to follow. For each SMI focus area, the following sections describe what decisions have been made and why.

STATUTORY ACCOUNTING AND FINANCIAL REPORTING: International Accounting and Principle-Based Reserving

6. Statutory accounting and financial regulatory reporting are at the core of solvency-based financial monitoring of U.S. insurers. The current statutory accounting model and financial reporting system are the culmination of extensive deliberation beginning with the insurance accounting codification project that became effective in 2001, and the continuous maintenance efforts led by insurance regulators since that time.

7. U.S. generally accepted accounting principles (GAAP) play a significant role in the maintenance of the statutory-based accounting model. In recognition of the convergence project under way between U.S. GAAP and International Financial Reporting Standards, the Solvency Modernization Initiative (E) Task Force identified the statutory accounting model and regulatory financial reporting system as one of its focus areas.

8. The Solvency Modernization Initiative (E) Task Force charged the International Solvency and Accounting Standards (E) Working Group to consider, among other things, the future of statutory accounting and reporting as a result of the global desire for a single set of high-quality accounting and financial reporting standards that can be utilized internationally.

9. In the SMI, U.S. insurance regulators have also concentrated on one of the largest values in the life and health insurance company balance sheets: their reserve liabilities. As international accounting moves away from formula-based approaches and toward more principle-based valuation due to increasingly complex insurance products, regulators looked to improve the reserve values for life and health insurance business in the U.S. and to increase uniformity in the process. The project became known as principle-based reserving (PBR).

Background on U.S. SAP

10. The *Accounting Practices and Procedures Manual* includes the baseline statutory accounting principles (SAP) insurers use for insurance regulatory financial statements, as occasionally modified by the accounting principles or practices prescribed or permitted by an insurer's domiciliary state. SAP is used to determine, at the financial statement date, an insurer's financial condition and its ability to pay claims and other obligations as they come due.

11. The objectives of SAP differ from the objectives of GAAP. SAP is designed to address the concerns of regulators, who are the primary users of statutory financial statements. SAP includes not only accounting principles, but also other aspects designed to prevent or avoid particular solvency-related problems. GAAP is designed to meet the varying needs of the different users of financial statements, such as investors. As a result, GAAP attempts to gauge a company's profitability by matching revenues to expenses, while SAP focuses on an insurer's ability to pay future claims. As an illustration of the difference, SAP expenses acquisition costs as incurred (because those funds are not available to pay claims), yet GAAP capitalizes acquisition costs and expenses them over time to match the revenues earned.

12. Even with these differences, SAP utilizes the framework established by GAAP. It does this, in part, through the SAP maintenance process, which requires the NAIC to consider new GAAP pronouncements adopted by the Financial Accounting Standards Board (FASB). More specifically, the NAIC must adopt as-is, adopt with modification or reject GAAP once adopted by the FASB.

13. SAP is also the basis used for insurers in U.S. tax law, which is a consideration when regulators discuss changes to SAP.

The Path of U.S. GAAP Convergence with IFRS

14. In 2002, the International Accounting Standards Board (IASB) and the FASB signed the Norwalk Agreement and have since taken on projects with an aim to develop a single global accounting standard. Numerous projects will impact insurance company general purpose accounting, including insurance, financial instruments, leases and revenue-recognition standards.

15. The Insurance Contracts project initially aimed to develop a single global comprehensive accounting standard for insurance contracts. In 1997, the IASB decided to address accounting for insurance contracts in a two-phase project. The first phase of the project was completed in May 2004 with the issuance of IFRS 4: Insurance Contracts. A few restrictions in practice were made, but generally a wide variety of pre-existing insurance accounting practice was allowed. The second phase is still in progress, with release of the FASB exposure draft and the IASB proposed standard in 2013. Fundamental differences still exist between the FASB and IASB on the insurance contracts standard, but there is still an expressed plan to continue to work together to attempt to produce separate standards with minimal differences.

16. The IAIS has been working with the IASB on their insurance contracts and other projects. The IAIS "considers it is most desirable that the methodologies for calculating items in general purpose financial reports can be used for, or are substantially consistent with, the methodologies used for regulatory reporting purposes, with as few changes as possible to satisfy regulatory requirements. However, the IAIS also recognizes (sic) that this may not be possible or appropriate in all respects, considering the differing purposes. The IAIS believes it is essential that differences between general purpose financial reports and published regulatory reports are publicly explained and reconciled."[1] This statement has been adopted by the IAIS, and agreed by the NAIC.

Looking Forward Regarding U.S. SAP

17. The current SAP system requires evaluation of GAAP pronouncements to accept fully, modify or reject those pronouncements. With no change to process, any convergence of GAAP and IFRS will flow through the SAP process for consideration, and some changes already have. With each change, U.S. insurance regulators must consider whether to modify the GAAP accounting or to make adjustments in other parts of the regulatory system so as not to lose the solvency perspective of the regulatory financial statement.

[1]International Association of Insurance Supervisors (IAIS), Insurance Core Principles (ICP) 14: Application Guidance, 14.0.1.

18. One such example would be the introduction of full market consistency to the accounting basis for insurance contracts. When there is low market activity, financial assets (e.g., bonds) held by an insurance enterprise would qualify for amortized cost measurement, as it is a long-standing business practice of insurers to match invested assets with liabilities by holding many of those financial assets backing the liabilities, to maturity. With limited market activity, it seems clear and consistent that such assets would be appropriately accounted for at amortized cost. Otherwise, the use of fair value can cause fluctuations within an insurer's financial statements that are inconsistent with the insurance business model; thus reflecting a financial position that does not depict the most relevant information to the user of the financial statements. A concern regulators have is that the mere fluctuation in interest rates might require them to put an otherwise financially solvent insurer into receivership. One could introduce market consistency and some adjustment in the calculations to stabilize the impact of fluctuating interest rates, but then need to weigh the extra complexity versus the benefit.

19. Another example is the treatment of short-term contracts and long-term contracts, especially related to discounting. It is the NAIC view that discounting on *long-term contracts* is appropriate, but that discounting on *short-term contracts* would have an immaterial effect and could even introduce more uncertainty in the process. More simplistic and less costly calculations could be sufficiently transparent.

20. As part of the SMI, U.S. insurance regulators decided to document the following:

    a. The purpose of the regulatory accounting model.

    b. A potential recommendation regarding whether the NAIC should continue to maintain an entire codification of statutory accounting.

    c. A recommendation of whether regulatory financial statements should continue to be utilized for public purposes.

21. A "Primary Considerations Document" was drafted to frame some of these issues, and included within it a continuum of options available to regulators on the policy issue. This document was exposed and discussed at the 2010 Summer National Meeting. Comments varied, but some of the more significant comments dealt with: 1) the desire to maintain control and not relinquish it to a third party (e.g., the IASB); 2) the value of prescribed and permitted practices; 3) the need for rules within the U.S. that could conflict with the use of principle-based accounting for IFRS; and 4) the timing and whether it is too early to make a decision.

22. The IASB and FASB continue to work on the insurance contracts standards. The U.S. Securities and Exchange Commission (SEC) is also watching what is transpiring with accounting standards and will decide how statements prepared in accordance with IFRS will be utilized within the U.S. With all of these moving parts, the SMI placed its decisions related to the future of statutory accounting on hold, but continues to actively monitor the discussions of the IASB and FASB. The NAIC anticipates submitting comments with each exposure, as it did in November 2010.

23. A final NAIC policy decision on the future of statutory accounting is expected to be made once the IFRS 4 standard from the second phase is adopted by the IASB/FASB and/or when the SEC makes their decisions. As the IASB/FASB and SEC decisions are substantive, the decisions are taking more time than originally planned. It is expected that these decisions might not be made until after the SMI formally ends.

Background on PBR

24. Reserve calculations for life insurance have been formula-driven for almost 150 years. While the formulaic reserves are consistent across companies and can be easily checked for compliance, the preciseness of such reserves varies widely, especially where 1) insurance products have become more complex (e.g., universal life features and option-based policy guarantees); and 2) a company's underwriting practices or expense containment is substantially different from industry averages.

25. Imprecise reserve values have led companies to utilize alternative practices to recognize the economic value of the reserves. One such practice is the use of captives or special purpose vehicles (SPVs). Another practice is the development of products where the economic reserve would be higher than the statutory reserve, thus creating a lower reserve on the regulatory balance sheet than economically viable.

26. The PBR approaches would more fully reflect the company's own mortality, lapse and other policy experience (where justified), risks inherent in secondary guarantees and policyholder options, the probability of exercising those guarantees and options, and the availability of cash flows from company investments to support those values. The traditional formulae would be replaced by stochastically generated reserves (i.e., taking into account probabilities rather than predefined answers) with some safeguards, such as justification for deviations away from industry averages and "floors" or minimums in calculations. Companies with more simplistic products and less risk could use simpler methodologies.

27. The move to PBR valuation requires legislative changes by state. The NAIC has adopted its proposed changes in the 2009 version of the *Standard Valuation Law* (#820) and in the 2012 version of the *Standard Nonforfeiture Law for Life Insurance* (#808). The changes to the Standard Valuation Law (SVL) would refer to an NAIC Valuation Manual containing the methodologies to be used to determine reserves and more. The first edition of the Valuation Manual was adopted in 2012.

Looking Forward Regarding PBR

28. Once 42 of the 55 jurisdictions with greater than 75% of written premiums adopt revised law to introduce the Valuation Manual, it will be operative January 1 following the first July 1 after the threshold is met. This translates to an operative date of between six and 18 months after the threshold is met. Then, there will be at least three years after this operative date before PBR is required (in those states with the law). PBR will be implemented prospectively, only for policies issued on or after the operative date of the Valuation Manual.

29. The Principle-Based Reserving Implementation (EX) Task Force will coordinate PBR activity with other NAIC groups to make necessary changes in financial reporting,

statistical reporting and analysis tools; will facilitate training of insurance department regulators; and will utilize collaborative efforts through the NAIC to successfully implement PBR.

CORPORATE GOVERNANCE AND RISK MANAGEMENT

Corporate Governance

30. Corporate governance, according to the IAIS, refers to systems (such as structures, policies and processes) through which an entity is managed and controlled. In the SMI, regulators were to consider whether laws, regulations or regulatory actions could be modified to improve continual understanding of a company's corporate governance and determine the potential impact of poor corporate governance on an insurance company's solvency.

Background

31. U.S. insurance regulators review the corporate governance of prospective insurers before granting a certificate of authority or license to write insurance business. This review generally focuses on the background and experience of directors and senior management that will be charged with governing the insurer.

32. U.S. insurance regulators review their domiciliary insurers' corporate governance practices during on-site financial examinations. The focus on corporate governance during a financial examination has increased significantly as the U.S. moved to a risk-focused examination process beginning in 2007. Examiners have cited concerns related to board oversight, succession planning, lack of formal risk management and no independent internal audit functions. These issues have typically been dealt with on an ad-hoc basis through management letter comments and recommendations, as there is not a set of uniform corporate governance standards for insurers within insurance regulation. Given that most of the states' insurance laws do not address specific issues of corporate governance practices directly, U.S. insurance regulators have dealt with corporate governance issues through the application of the state's business organization law (e.g., corporation law, limited liability company law, etc., depending on the form of entity), analogy to other appropriate law, comparison of a particular company's practices to industry standards or the practices of like entities, and reliance on commissioner's authority to assure the operation of companies consistent with standards of honest dealing, good faith and solvency.

33. The most recent improvements to U.S. regulatory oversight of insurance industry corporate governance were targeted to respond to the financial crises of 2007–2013 and the corporate accounting scandals of the early 2000s. U.S. insurance regulators developed greater corporate governance standards for insurers related to internal accounting controls for the financial reporting process. These actions took the form of amendments to the *Annual Financial Reporting Model Regulation* (#205), commonly known as the Model Audit Rule, which went into effect in 2010. The revisions primarily covered three significant governance areas: external auditor independence; board audit committee responsibilities; and internal controls over financial reporting. Those changes focused on financial reporting and did not address many broader governance matters, such as risk management.

34. Around the world, the 2007–2013 global financial crises led to discussions by financial regulators regarding the importance of corporate governance and risk management. Many financial supervisors took measures to clarify standards and expectations relating to corporate governance and risk management for regulated entities in their respective areas.

35. In its 2009–2010 survey, the IMF found that U.S. insurance regulators "largely observed" many of the IAIS ICPs related to corporate governance and risk management. However, the IMF cited considerations for enhancements in some areas, including the establishment of: 1) specific suitability criteria (e.g., background, experience, etc.) for key persons; 2) requirements in relation to ongoing notifications regarding suitability; 3) additional requirements or guidance for insurers related to good corporate governance practices; 4) requirements for insurers in maintaining an internal audit function; and 5) explicit requirements for insurers in maintaining risk-management systems capable of identifying, measuring, assessing, reporting and controlling risks.

Regulatory Action

36. U.S. regulators concluded that a greater regulatory focus on corporate governance is required, and formed the Corporate Governance (EX) Working Group in September 2009.

37. The Working Group had three charges, the first of which was to outline high-level corporate governance principles for use in U.S. insurance regulation. To do so, regulators analyzed the statutory and regulatory requirements and initiatives and best practices of the states, other countries, other regulators and the insurance industry. The Working Group was also asked to determine the appropriate method to ensure adherence with such principles, giving due consideration to development of a model law and to develop additional regulatory guidance including detailed best practices for the corporate governance of insurers.

38. Second, the Working Group was asked to review the current IAIS principles and standards related to corporate governance (adopted after the U.S. FSAP). As part of this review, it was asked to provide input and drafting to the IAIS Governance and Compliance Subcommittee, and on other IAIS papers as assigned by the parent Task Force. As a result of this work, it was anticipated that the Working Group should be able to identify future initiatives to improve our regulatory solvency system.

39. Third, and finally, the Working Group was asked to consider the development of insurance regulatory education for boards, senior management and regulators.

40. To begin the process, the Working Group reviewed existing U.S. state and federal law relating to corporate governance requirements for insurers. This project summarized the existing corporate governance laws in California, Delaware, Georgia, Illinois, Iowa, Nevada, New York and Texas. In addition, the Working Group studied Rhode Island's recent incorporation of express corporate governance proscriptions into its insurance code. The study found that existing corporate-governance laws vary significantly from state to state, set forth their requirements in reference to principles of fiduciary duty rather than as detailed or specific in relation to overseeing specific practices of the business of insurance, and do not establish specific legal duties of a board of directors toward policyholders.

41. The Working Group also performed a study of global corporate governance principles and standards such as those established by the IAIS, Australia, Canada, Switzerland and the United Kingdom. The study sought review and input from supervisors from each of these countries on the summarized principles. Working Group members noted that many of the standards and principles adopted in other countries, and included in the IAIS core principles (as updated post-FSAP), were expressly addressed within the current U.S. insurance regulatory system.

42. After reviewing existing corporate governance law in the United States as well as principles and requirements placed upon insurers in other countries, the Working Group developed a draft white paper outlining corporate governance principles for use in U.S. insurance regulation. The draft White Paper outlined principles that describe high-level standards for an insurer to follow in providing consumer protection and capital adequacy. Guidance supporting the principles was also included to provide detail regarding how an insurer can comply with a specific principle. In developing the principles and guidance in the draft White Paper, the Working Group was mindful of the recent corporate governance and risk management recommendations provided by the IMF in the FSAP. The principles and guidance developed, while not adopted as an officially sanctioned white paper, were utilized by the Working Group to determine what changes may be required to the U.S. insurance regulatory structure in order to evaluate adherence with such principles.

43. Regulators developed a summary of existing corporate governance requirements found within NAIC/insurance-specific sources and more general, broadly-based sources, to identify potential changes in the existing insurance regulatory structure that could be affected through the SMI. This summary identified existing corporate governance requirements; and standards and regulatory monitoring practices that are applied to insurance entities in the United States within the structure of *The United States Insurance Financial Solvency Framework* (adopted by the NAIC in 2010). The summary *Existing U.S. Corporate Governance Requirements* was adopted by the Working Group on December 22, 2011.

44. The Working Group then compared existing U.S. requirements and regulatory needs, best practices and the principles outlined within the IAIS ICPs. The results of this comparative analysis, along with proposed enhancements to the U.S. system resulting from this study, have been presented in a document titled, *Proposed Response to a Comparative Analysis of Existing U.S. Corporate Governance Requirements*. Adopted by the NAIC in early 2013, this document outlines the rationale of regulators in reaching policy decisions in this area. The following significant enhancements outline the policy decisions approved by the Working Group through the adoption of this document:

- Additional corporate governance disclosure requirements for insurers on an annual basis, implemented through the development of a new model law to provide confidentiality and consistency in the collection of information.
- A new requirement for large insurers to maintain an effective INTERNAL audit function (implemented through a change to Model #205).
- An accreditation proposal requiring adoption of a specific element of the existing *Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in a Hazardous Financial Condition* (#385), which would require

insurers deemed to be in a hazardous financial condition to correct corporate governance deficiencies to the satisfaction of the commissioner.

- The development of a common methodology to be used consistently by financial examiners and analysts across the states in assessing the corporate governance practices of insurers.
- The submission of referrals to NAIC groups charged with oversight of the company licensing, annual financial analysis and onsite examination processes to ensure that the responsibility to review key individuals for suitability is clear and consistent with international standards.

The developments in this area reflect regulators' opinion that a review of corporate governance practices is essential to effectively monitoring the financial solvency of insurers. The policy decisions reached by regulators in this area recognize differences between the U.S. system of corporate governance regulation and the systems of other countries. Therefore, these policy decisions sensibly balance regulatory needs, improving consistency with international standards, and avoiding placing unnecessary/redundant burdens on the insurance industry. The following table illustrates how the policy decisions reached by regulators relate to the recommendations received as a result of the 2009 FSAP.

FSAP Recommendation	**U.S. Policy Decision**
Develop specific suitability criteria (e.g., background, experience, etc.) for key persons responsible for governing/managing insurers.	Defining specific suitability requirements for key persons in statute could result in limiting the current process of evaluating suitability through a review of biographical affidavits and onsite interviews without providing a discernible benefit. Collection of additional corporate governance information annually will provide information on practices that insurers have put in place (i.e., suitability standards) to determine whether officers and key persons in control functions have the appropriate background, experience and integrity to fulfill their prospective roles. In addition, enhancements have been proposed to clarify the role of regulators and ensure consistency with international standards in reviewing the suitability of key individuals during the company licensing, financial analysis and financial examination processes.
Develop ongoing requirements for insurers to notify regulators regarding changes in the suitability status of key persons.	Insurers will be required to report any changes in an officer's or key person's suitability status as outlined by the organization's internal standards.
Develop additional requirements and/or guidance for insurers related to good corporate governance practices.	The project to develop a common methodology to assess the corporate governance practices of insurers will result in the development of additional guidance relating to good and bad corporate governance practices.

FSAP Recommendation	U.S. Policy Decision
Develop requirements for insurers in maintaining an internal audit function.	Large insurers to maintain an effective internal audit function.
Develop explicit requirements for insurers in maintaining risk management systems capable of identifying, measuring, assessing, reporting and controlling risks.	Insurers must maintain a risk management framework to assist in identifying, assessing, monitoring, managing and reporting on material and relevant added to the *Risk Management and Own Risk and Solvency Assessment Model Act* (#505).

Looking Forward

45. The Working Group recommendations have been distributed to the various NAIC groups responsible for the respective subject areas of those recommendations for further consideration and implementation. The responsibility to draft and develop model laws requiring annual submission of corporate governance information and the maintenance of an effective internal audit function will be fulfilled by the Working Group, after receiving the approval of the Executive (EX) Committee. It is expected that both models will be developed and adopted by the end of 2013, with implementation of all enhancements to occur over the next couple of years.

Risk Management

46. Regulators currently perform certain elements of risk management evaluation in the enhanced risk-focused surveillance process, which includes an assessment of risk and the insurer's ability to manage or mitigate risks. To formalize regulatory considerations in this area, regulators drafted a consultation paper to discuss risk management reporting and quantification requirements in light of the global development of risk management supervisory tools that incorporate periodic risk reporting, stress tests, and provide a group capital and prospective solvency assessment.

47. Ultimately the NAIC agreed to adopt the international approach to implement an Own Risk and Solvency Assessment (ORSA). In September 2012, the NAIC adopted the newly created *Risk Management and Own Risk and Solvency Assessment Model Act* (#505), which provides a statutory basis for requiring a risk management framework and the filing of an ORSA summary report. More specifically, it requires insurers above a certain premium threshold to follow the *NAIC Own Risk and Solvency Assessment (ORSA) Guidance Manual* when developing the reports that are required in the model. The model includes three primary requirements: 1) maintain a risk-management framework; 2) regularly conduct an ORSA; and 3) submit to the lead state commissioner an ORSA Summary Report.

Looking Forward

48. The NAIC has conducted one ORSA pilot project and will perform another to increase the effectiveness of the ORSA reports that would be required beginning in 2015. The first pilot occurred in July 2012, and resulted in 1) general feedback to the industry;

2) specific input to individual insurance groups; 3) small changes to the ORSA guidance manual; and 4) initial opinions from regulators regarding the positive impact that ORSA reports will have on group supervision by U.S. regulators.

49. Regulators are also interested in working with chief risk officers of some of the largest insurers in the U.S. to increase ORSA effectiveness at the initial implementation in 2015. Chief risk officer input will help regulators to develop regulatory guidance to be used by all companies performing ORSA and may help prepare regulators to use ORSAs in regulatory practice.

50. The NAIC is currently in the process of establishing the regulator guidance for reviewing the ORSA summary reports that will be required effective January 1, 2015. The guidance is expected to be focused on using the information to increase the analyst's ability to assess the liquidity, leverage, profitability and overall financial condition and capital of the insurance group. The guidance is also expected to set forth a process in which the examiner could review the processes used by the group in establishing its assumptions and techniques that were utilized in developing the summary report. This process of reviewing assumptions and techniques is deemed to a function that must be completed during an on-site review, where the regulator is able to understand and gauge through various auditing techniques the rigor and reasonableness of the group's enterprise risk management in developing the ORSA Summary Report.

REINSURANCE

Background

51. Reinsurers licensed in the U.S. are directly regulated through financial regulation (similar to direct financial regulation for primary insurers). For market regulation, reinsurers are comparatively less impacted than primary insurers, largely because of differences in consumer knowledge. Reinsurers and insurers (the consumer for reinsurance) have relative equality in negotiating leverage and extensive knowledge of the product. Thus, market regulation is not as extensive as it is in the primary market where consumers have less leverage and knowledge of the product.

52. In addition to direct financial regulation of licensed reinsurers, the U.S. uses an indirect approach to reinsurance financial supervision through statutory accounting requirements for U.S. primary companies (or "ceding" companies) transferring business via reinsurance. Generally, these accounting requirements allow credit for reinsurance on the balance sheet to the extent the reinsurance is deemed collectable. For example, reduced or no credit is given to the extent reinsurance payments are overly delayed.

53. This accounting credit has historically been given for use of reinsurers who are licensed in the U.S. and for reinsurers who are not licensed in the U.S. (called "unauthorized reinsurers") but have posted collateral in the U.S. (as security for their reinsurance obligations to U.S. ceding insurers). This system of credit for reinsurance has allowed U.S. regulators to avoid the need to assess the wide variety of regulatory systems in the reinsurers' home countries and reconcile their accounting and oversight frameworks to their U.S. equivalents. Since there are a variety of systems of regulation and accounting around the world, the differences between them and the U.S. have been considered less material due to the requirement that the reinsurance obligations of unauthorized

reinsurers must be 100% collateralized in order for the ceding company to take balance sheet and income statement credit.

54. The collateral requirements for reinsurers licensed outside of the U.S. have been a frequent subject of debate over the past decade at the NAIC. Numerous non-U.S. reinsurers, as well as non-U.S. regulators, have called for elimination of the collateral requirement for reinsurers licensed in well-regulated jurisdictions.

55. In 2007, in light of the evolving international marketplace, the NAIC determined that the timing was appropriate to consider whether a different type of regulatory framework for reinsurance in the U.S. was warranted. The Reinsurance Regulatory Modernization Framework proposal (Reinsurance Framework) was a conceptual framework that was developed by the Reinsurance (E) Task Force during 2007 and 2008 in response to its charges to consider the current collateralization requirements regarding unauthorized reinsurers, and to consider the design of a revised U.S. reinsurance regulatory framework. The Reinsurance Framework was intended to facilitate cross-border reinsurance transactions and enhance competition within the U.S. market, while ensuring that U.S. insurers and policyholders are adequately protected against the risk of insolvency. The NAIC adopted the Framework during its 2008 Winter National Meeting.

56. The Reinsurance Framework recommended implementation through federal legislation in order to best preserve and improve state-based regulation of reinsurance, ensure timely and uniform implementation of this legislation throughout all NAIC-member jurisdictions, and as a more comprehensive alternative to related federal legislation. The Reinsurance (E) Task Force developed proposed federal legislation, the Reinsurance Regulatory Modernization Act of 2009 in an effort to implement the Reinsurance Framework. At that time, Congress was focused on developing financial regulatory reforms within the Dodd-Frank Act. While the Dodd-Frank Act did contain certain provisions that impact reinsurance regulation, the NAIC's proposed federal legislation was not included.

57. On July 21, 2010, the Dodd-Frank Act became law, which included enactment of the federal Nonadmitted and Reinsurance Reform Act (NRRA). The NRRA prohibits a state from denying credit for reinsurance if the domiciliary state of the ceding insurer recognizes such credit and is an NAIC-accredited state. The NRRA preempts the extraterritorial application of credit for reinsurance laws by states and other than the ceding insurer's domiciliary state, and would permit states to proceed with reinsurance collateral reforms on an individual basis if they are accredited. The NRRA also defers to the reinsurer's domiciliary state sole responsibility for regulating the reinsurer's financial solvency.

58. The Dodd-Frank Act also created the Federal Insurance Office (FIO) to establish insurance expertise at the federal level. The Dodd-Frank Act also authorizes the secretary of the U.S. Treasury Department and the U.S. Trade Representative jointly to negotiate and enter into bilateral or multilateral agreements regarding prudential matters with respect to the business of insurance or reinsurance. The FIO will assist the Treasury secretary with those responsibilities It is important that the FIO and state insurance regulators communicate and coordinate in order to preserve the critical link between state-based solvency regulation and the impact that reinsurance has on U.S. insurer solvency.

Regulatory Action

59. In December 2010, the Reinsurance (E) Task Force was charged to consider amendments to the *Credit for Reinsurance Model Law* (#785) and *Credit for Reinsurance Model Regulation* (#786) to incorporate key elements of the Reinsurance Framework. In November 2011, the NAIC adopted revisions to these models that serve to reduce reinsurance collateral requirements for reinsurers meeting certain criteria for financial strength and business practices that are licensed and domiciled in qualified jurisdictions.

60. Other key elements of the revisions include:

- The revised models establish a certification process for reinsurers – a certified reinsurer is eligible for collateral reduction with respect to contracts entered into or renewed subsequent to certification.

- Each state will have the authority to certify reinsurers, or a commissioner has the authority to recognize the certification issued by another NAIC-accredited state. This eliminates the need for a reinsurer to be evaluated by each and every state, but preserves a commissioner's right to do so.

- Reinsurers are subject to certain criteria in order to be eligible for certification, as well as ongoing requirements in order to maintain certification. Examples of evaluation criteria include, but are not limited to, financial strength, timely claims payment history, and the requirement that a reinsurer be domiciled and licensed in a "qualified jurisdiction."

- Each state may evaluate a non-U.S. jurisdiction in order to determine if it is a "qualified jurisdiction." A list of qualified jurisdictions will be published through the NAIC committee process. A state must consider this list in its determination of qualified jurisdictions, and if the state approves a jurisdiction not on this list, the state must thoroughly document the justifications for approving this jurisdiction in accordance with the standards for approving qualified jurisdictions contained in the model regulation.

- A certified reinsurer will be eligible for collateral reduction with respect to contracts entered into or renewed subsequent to certification. A state will evaluate a reinsurer that applies for certification, and will assign a rating based on the evaluation. A certified reinsurer will be required to post collateral in an amount that corresponds with its assigned rating (0%, 10%, 20%, 50%, 75% or 100%), in order for a U.S. ceding insurer to be allowed full credit for the reinsurance ceded.

61. To assist the states in implementing the revised models, during 2012 the Task Force worked to put into place certain elements with respect to: 1) accreditation standards; 2) the review and approval of qualified jurisdictions; and 3) the creation of a new NAIC group to provide advisory support and assistance to the states in the review of reinsurance collateral reduction applications.

62. In April 2013 the NAIC adopted revisions to the accreditation standard for reinsurance ceded reflecting key elements from the revised Model #785 and Model #786. The revised standard was considered and adopted on an expedited basis and became effective immediately. The provisions within the accreditation standard pertaining to certified reinsurers do not require adoption by every NAIC jurisdiction; rather, these provisions are considered an optional standard (i.e., a state is not required to adopt the revisions to the credit for reinsurance models, but if it chooses to reduce reinsurance collateral requirements the state law must be substantially similar to the key elements of these revisions). The Reinsurance Task Force will consider developing revised standards for Part B: Practices and Procedures during 2013 for recommendation to the Financial Regulation Standards and Accreditation (F) Committee.

Looking Forward

63. Under revised reinsurance law and regulation based on the revised NAIC models, a state will need to designate which non-US supervisory jurisdictions are "qualified jurisdictions." Through the NAIC process, regulators will develop and maintain an NAIC list of recommended qualified jurisdictions. Each state will then consider this list, justifying approval of any additional jurisdiction not listed.

64. To arrive at the NAIC list of qualified jurisdictions, the Task Force is developing a process to 1) review non-U.S. jurisdictions, including consideration of budgetary and resource requirements; 2) determine which jurisdictions will be reviewed initially; and 3) develop an implementation timeline. The process, considering relevant international guidance for recognition of reinsurance supervision, will be an outcomes-based comparison to financial solvency regulation under the NAIC Financial Regulation Standards and Accreditation Program and will include evaluation of adherence to international supervisory standards. The plan is to implement the *NAIC Process for Developing and Maintaining the List of Qualified Jurisdictions* in 2013.

65. The states will also need to assign ratings or collateral requirements for individual reinsurers. The NAIC, through the Reinsurance Financial Analysis (E) Working Group (Reinsurance-FAWG), will provide advisory support and assistance to states in the review of reinsurance collateral reduction applications, aiming to strengthen state regulation and prevent regulatory arbitrage. In 2013 the Task Force adopted the *Reinsurance-FAWG Procedures Manual*, describing processes to facilitate communication of relevant information between the states with respect to individual reinsurers or reinsurance-related issues and multi-state certification recognition.

66. As of May 2013, 13 states have adopted reduced reinsurance collateral provisions. Of those 13 states (California, Connecticut, Delaware, Florida, Georgia, Indiana, Iowa, Louisiana, Maryland, New Jersey, New York, Pennsylvania and Virginia), only Florida, New York and Connecticut have approved any reinsurers for collateral reduction. Insurers domiciled in the 13 states wrote approximately 50% of the direct premium in the U.S. in 2011, so adoption in these 13 states represents a significant portion of the U.S. market. Several additional states have indicated they plan to adopt the revised models, with many planning to do so in 2013.

67. Credit for reinsurance requirements (including collateral) within the U.S. and European Union (EU) insurance supervisory systems continue to be the subject of discussion within the ongoing U.S./EU Dialogue. This NAIC will continue to participate in this dialogue.

68. The NAIC has committed to do the following: 1) undertake a re-examination of the collateral amounts within two years from the effective date of the revisions to the models (e.g., Nov. 6, 2013); and 2) revisit the issue of state uniformity in the adoption of the models within three years of the adoption of the new accreditation standard by the NAIC (e.g., April 9, 2016).

GROUP SUPERVISION

Background

69. U.S. state insurance holding company system[2] supervision (group supervision) is largely built on an indirect approach to supervision, meaning the regulators have influence and power at the legal entity insurer that can result in action taken by the group. Given the powers include required prior approval of material transactions, the power is significant.

70. In the U.S., group supervision and oversight is conducted by state insurance regulators primarily through licensed insurance legal entities resulting from the implementation and execution of uniform insurance holding company laws and regulations. The U.S. indirect approach provides:

    a. Unrestricted access to any information in possession of the insurer, the parent or other any other entity within the holding company system including non-regulated entities.

    b. Financial statements of the entire holding company system, which would include all affiliates.

    c. Fit and proper requirements.

    d. Rights of inspection (examination).

    e. Approval and intervention powers for certain transactions and events involving insurers.

    The state insurance departments must be informed or approve material affiliated transactions associated with investment purchases, reinsurance agreements, management and cost sharing agreements, tax allocation agreements, certain guarantees, intercompany investments, and requests for extra-ordinary dividends and any other material transactions that may adversely affect policyholder interests. All applicable contracts/agreements permitting such transactions must be submitted for regulatory approval to avoid the possibility of management inappropriately moving cash out of the regulated entity.

[2] A holding company system consists of two or more affiliated persons, one or more of which is an insurer. Of the roughly 7,800 insurance legal entities regulated by states, 78% of these are within a holding company system in 2011.

71. Group supervision in the U.S. has been called a "windows and walls" approach. "Walls," via prior approval of significant transactions, are built between insurers and other legal entities operating within a group, and "windows" allow unrestricted access to any information in possession of the insurer, the parent or any other entity within the holding company system. However, U.S. regulators believe that its group supervision approach goes beyond that label because the state regulator has the ability to influence the affairs of groups.

72. This approach to group supervision is influenced by the existing U.S. legal infrastructure, including but not limited to corporate law, insurance law, case/tort law with regard to legal liability (e.g., class action lawsuits) and receivership and bankruptcy laws. A good example to illustrate how the U.S. legal environment impacts group supervision can be seen by the emphasis placed on the ability to place "walls," or ring-fence, insurance legal entities and their related assets. Consider the following legalities:

    a. The U.S. receivership and bankruptcy proceedings allow for the separation of legal liability among the legal entities of a holding company system.

    b. Holding company structures are permitted to include U.S. based insurers in many different forms with few restrictions.

    c. These holding company systems may include unregulated entities, as well as regulated entities (including financial services entities), within the same holding company structure.

    d. The existing state insurance holding company laws do not differentiate between a group that is local in nature and one that is internationally active.

    By considering the above, one can draw legal conclusions to reinforce why ring-fencing has become an important regulatory tool to safeguard policyholders and other claimants. However, the use of ring-fencing exists not only to protect the policyholders of a given jurisdiction, but also to protect other entities within the group. Ring-fencing is an important part of the supervision of legal entities that is designed to limit risk within each entity. But the U.S. approach to group regulation requires all supervisors to communicate any concerns up to the lead state in order to have a bottom-up view of the group, using the various ring-fencing tools and techniques that exist within the regulatory structure. However, the U.S. approach to group regulation also utilizes a top-down view, where the lead state is responsible for reviewing the financial statements of the entire holding company system, and assessing the overall financial condition of the group, including assessing the risks from non-regulated entities along with an understanding of the group's enterprise risk management and corporate governance process. This collective use of the bottom-up view and the top-down view allow the states to determine where the risks of the group are derived from and how best to deal with those risks. Such an approach is necessary with any group because the stability of all entities within the group have a bearing on each other.

U.S. Group Supervisory Framework

73. All states and the District of Columbia have adopted substantially similar language found within the NAIC *Insurance Holding Company System Regulatory Act (#440)* and its related *Insurance Holding Company System Model Regulation* (#450). (These models are required by the NAIC Financial Regulation Standards and Accreditation Program.)

74. The supervision of the holding company system is routinely applied using the following mechanisms: reporting requirements, licensing oversight, financial analysis and financial examination review procedures.

Supervision Mechanism – Reporting

75. The state laws require annual filings regarding the holding company system which detail intercompany contract terms, relationships, biographical and other data for officers and directors of the ultimate parent and other financial information. Additional holding company financial information is required through other statutory filings such as the NAIC financial annual statement, where holding company information such as disclosure of affiliated transactions and a detailed organizational chart (Schedule Y) are included. Overall, the holding company system financial information requests can also be ad hoc by state insurance regulators, as the Holding Company Act provides access to books and records of the holding company system and affiliates.

Supervision Mechanism – Financial Analysis

76. The *Framework for Insurance Holding Company Analysis* was incorporated into the *Financial Analysis Handbook* to assist analysts with performing routine analysis on holding companies. The *Financial Analysis Handbook* contains an Analyst Reference Guide and Supplemental Procedures, including Form A, Form B, Form D, Form E and Extraordinary Dividend/Distribution procedures, as follows:

    a. Holding Company Analysis Level One and Level Two Procedures

    b. Form A—Statement of Acquisition of Control of or Merger with a Domestic Insurer

    c. Form B—Insurance Holding Company System Annual Registration Statement

    d. Form D—Prior Notice of a Transaction

    e. Form E (or Other Required Information)—Pre-Acquisition Notification Form Regarding the Potential Competitive Impact of a Proposed Merger or Acquisition by a Non-Domiciliary Insurer Doing Business in This State or by a Domestic Insurer

    f. Form F—Enterprise Risk Report

    g. Extraordinary Dividend/Distribution

77. As Form A, Form D, Form E and Extraordinary Dividend/Distribution are transaction-specific, the occurrence frequency of these transactions may vary. The NAIC Financial Regulation Standards and Accreditation Program requires that the state insurance department adequately and timely analyze these transaction specific filings and Form B. The depth and frequency of the analysis performed each year is based on the complexity and financial strength of the holding company system.

78. When there are two or more U.S. domestic insurers within a group, the applicable "lead state" will coordinate with other domestic supervisors within a group regarding the analysis procedures.

79. The *Model Regulation to Define Standards and Commissioner's Authority for Companies Deemed to be in a Hazardous Financial Condition* (#385), in part, provides an additional tool by which an Insurance Department may render the continuance of an insurers business hazardous to the public or policyholders.

80. The Financial Analysis (E) Working Group provides an additional layer of surveillance for insurance groups overall, supplementing individual state insurance departments' solvency monitoring by performing quarterly analysis on nationally significant groups that exhibit characteristics of trending toward or being financially troubled. The Working Group then works with domiciliary regulators and the lead state to advise the most appropriate regulatory strategies, methods and actions.

Supervision Mechanism – Examination

81. When multiple insurance legal entities are within the same group, the states may also engage in group examinations to maximize resources and create efficiencies. Examination work papers are typically shared real-time via a server and common software, which could result in a more timely update of insurer and group risk profiles under the NAIC's risk-focused solvency surveillance system.

Looking Forward

82. Key fundamental considerations continue to drive the discussion of the most appropriate enhancements to group supervision, especially as the NAIC works with international supervisors to develop a common framework for the supervision of internationally active insurers. Considerations include the depth of the overall regulatory framework in the U.S.; the legal framework for regulatory action; the protection of policyholders at the entity level; and the absence of a clear path to the flow ("fungibility") of capital in bad times (i.e., solvency concerns) between entities regulated by different jurisdictions and operating under different laws.

83. Essentially, the NAIC is considering incorporating certain prudential benefits of group supervision, providing clearer "windows" into the risks and overall financial strength embedded in group operations, while building upon the existing "walls" that provide the highest level of availability of capital resources and, therefore, policyholder protection. Some examples of areas receiving enhancements include enterprise risk, group capital assessment and supervisory colleges.

Group Capital Assessment

84. As one of the ways to provide clearer "windows" into the risks and overall financial strength embedded in group operations, U.S. regulators will require a group capital assessment as part of the Own Risk and Solvency Assessment (ORSA). The assessment does not establish a group capital requirement in the same sense as the legal-entity RBC requirement. However, the group capital assessment, in combination with the entity-centric legal framework for regulatory action, regulatory restrictions on the movement (fungibility) of capital, strong communication and cooperation between regulators, and other regulatory tools and safeguards, should allow earlier detection of potential financial and reputational contagion on insurance entities within the group or to the group as a whole.

Increased Participation in Supervisory Colleges

85. The U.S. state insurance regulators welcome the concept of supervisory colleges[3] as a useful platform to improve supervisory cooperation and coordination between international regulators to discuss insurance companies operating internationally. State insurance regulators both participate in and convene supervisory colleges. U.S. insurance regulators understand and embrace supervisory colleges; the states have been conducting a similar process for U.S. insurance legal entities within the same holding company system. The NAIC refers to this process as the "lead state" approach for insurance groups. U.S. insurance regulators have adopted best practices, which are incorporated into the *Financial Analysis Handbook*, and actively encourage and monitor participation in supervisory colleges.

86. U.S. insurance regulators currently host or will host supervisory colleges for the top U.S.-based groups that are considered internationally active insurance groups (IAIGs). Regulators have developed written best practices utilizing, but building upon, IAIS Insurance Core Principle (ICP) 25: Supervisory Cooperation and Coordination, which deals with supervisory colleges. Additionally, U.S. insurance regulators have begun to hold meetings to discuss and develop additional best practices, all with the intent of increasing the effectiveness of such meetings.

[3] Supervisory colleges are coordination mechanisms between international supervisors intended to foster cooperation, promote common understanding, and facilitate a communication and information exchange regarding insurance companies operating internationally.

CAPITAL REQUIREMENTS

87. Risk-based capital (RBC) is one of the methods used to monitor the capital adequacy of insurers. The RBC calculation is a standardized approach to measuring a minimum amount of regulatory capital required for an individual insurance company in consideration of its size and risk profile.

88. The RBC calculations are documented in the NAIC RBC manuals by business type (i.e., life, health and property/casualty). The RBC formulas in each manual are agreed upon by regulators and are referenced in the states' laws. Utilizing this approach, the RBC manuals can be updated and revised without requiring a change to state laws.

89. The RBC formula is a factor-based approach, but should be distinguished from simplistic methodologies that are often called factor approaches. The RBC is a detailed calculation performed on a risk-by-risk basis using company-specific data. Modeling, with regulatory-defined parameters, is used for some risks where factor approaches are not deemed sufficient.

Background

90. RBC work began in the early 1990s to address the limitations inherent in existing simplistic minimum capital and surplus requirements (e.g., a fixed-dollar amount, such as $1 million). These requirements did not reflect differences that exist from one company to another, differences such as: the riskiness of one line of business (e.g., auto insurance) compared to another (e.g., workers' compensation insurance), the amount of premium volume, the riskiness of the investment portfolio, and many others. RBC was developed as a capital adequacy standard that considers the risks and characteristics of the specific insurer.

91. RBC law defines the levels of company and regulatory action from least severe to most severe: company action, regulatory action, authorized control and mandatory control. With the extent of regulatory action commonly defined in state laws, a benefit of the RBC is that state insurance regulators can rely on the company's home (domestic) state for action, and regulators can take quicker action when they are specifically required by statute to take control of an insurer. However, lack of an RBC action level result does not preclude regulators from taking financial regulatory action on other grounds.

92. The RBC ratio is the total adjusted capital (TAC) divided by the authorized control level (ACL). The ACL results from a series of RBC calculations of risk exposure multiplied by risk factors, grouped by major risk category, and adjusted for independence of risk (by risk category or subcategory). An RBC ratio of 200% or more (when specific financial attributes of a company are not trending negatively[4]) does not trigger RBC action. RBC triggers include less than 200% at company action level; less than 150% at regulatory action level; less than 100% at authorized regulatory control; and less than 70% at mandatory regulatory control.

[4] Trend tests can result in a company action level trigger when the RBC ratio is less than 300%.

Looking Forward

93. The RBC formula is an effective tool to measure weakly capitalized companies and to require company and regulator action with limited court challenge. RBC will continue to be a final backstop in the financial regulatory oversight process. Supplementing the RBC, financial oversight will provide the analysis of the company's ability to be a going concern.

RBC Formula or Internal Model:

94. RBC was designed to utilize verifiable data for reliability and ease of verification. RBC is a standardized formula, varying by primary line of business (e.g., life, property/casualty, health), typically utilizing data disclosed in the insurer's statutory financial statement.[5] Benefits of using this data include the use of audited data (because the annual financial statement filing requires an audit by an independent certified public accountant (CPA) every year), the reserves being opined on by qualified actuaries, and some data being checked by state insurance regulators during their on-site examinations for each domiciliary U.S. insurer. Thus, the RBC formula utilizes a significant amount of standardized data that is subjected to accuracy and completeness checks. This was a conscious decision by the U.S. state insurance regulators, as they wanted the RBC results to be reliable and easily verified.

95. However, in some instances where a factor-based method was not considered to adequately capture the risk, regulators introduced modeling approaches to replace or supplement a factor-based approach for the particular risk or risks. The life RBC formula has already been updated to include some stochastic modeling in the RBC charge calculation for certain annuity products ("C-3 Phase 2 – interest rate and market risk – for variable annuity guarantees), and more work is under way to expand the use of models to other life insurance products as appropriate and to catastrophe risk for property/casualty RBC.

96. Regulators have concerns with a system that fully replaces a formula-based method with a company's internal model because of higher cost, less comparability of results, possible misuse and introduction of the potential for competitive advantages. SMI regulators believe the use of internal models and the regulatory approval necessary to use a model as a replacement for the standardized model does not currently add enough benefits to outweigh the costs. However, within other components of the financial regulatory system, regulators are considering the use of models.

RBC Measurement: Missing Risks

97. RBC is not the only safety mechanism for unexpected changes in valuation or unexpected losses. The underlying statutory accounting is performed on a conservative basis, which provides for some safety in the valuation before those values even enter into the RBC formula.

[5] The statutory financial statement is a uniform template adopted by the NAIC, known as the NAIC "blank," and used by all insurers of a similar business type. The blank is filed with the NAIC and the state insurance regulator. The insurers are also subject to a codified body of statutory accounting guidance that serves as the baseline requirement for all U.S. regulated insurers, and this includes uniform definitions of asset and investment types. By statute, the NAIC blank requires a significant amount of data and information from the insurers for the statutory annual statement.

98. The RBC then aims to capture each material risk for each particular insurance type. Some of the major general risk categories in the RBC formula include asset risk, insurance/underwriting risk, credit risk, interest rate risk and business risk. Some risks may not have been included in the RBC formulas (e.g., currency risk) because they were not considered to be significant or were difficult to quantify or not quantifiable. Focus on RBC in the SMI has been about ensuring the formulas are capturing all material risks. Going forward, state insurance regulators are developing an explicit catastrophe risk charge for inclusion in the property/casualty RBC formula (with adjustments to related charges that are currently embedded in other risk calculations) and are considering a pandemic charge in the health RBC formula (and removing the current charges out of other risk calculations). The NAIC is also reviewing the credit risk calculation to improve its accuracy. At present, the NAIC is reviewing the asset risk factors, classes of investments and asset quality designations based on historical default experience.

99. Operational risk is not explicitly identified in the RBC calculation, but is, arguably, partially included in certain existing risk charges, as well as in conservatism included in the accounting rules. Nonetheless, efforts are under way to develop a specific operational risk charge in the RBC formula, with initial consideration of factor-based methods (as used in other jurisdictions), which could eventually be augmented or replaced by an approach that incorporates qualitative elements or adjustments. Some advocate for formulas similar to how it is in other regulatory jurisdictions with growth charges and some proxy (such as a percentage of premium and/or losses), and others would like to study more qualitative aspects of operational risk.

RBC Correlation

100. Risk charges are currently combined within a square root formula, under the assumption that particular risks are either fully correlated or fully uncorrelated. Some international methodologies are developed to apply risk correlation matrices in their capital requirement calculations. The American Academy of Actuaries provided some research on the correlation methodologies used by some regulatory jurisdictions. At present, it can be argued that significant judgment is needed to populate risk correlation matrices, regulators are investigating the application of some intermediate step-wise correlations between the two extremes of 0 or 100 (perhaps 0/25/50/75/100) as a potential improvement over the current RBC square root formula.

101. Additional elements in the RBC formula also address concentrations, correlations and diversification. Examples include the invested asset concentration risk sections of the formulas and the property/casualty business line diversification adjustment.

RBC Safety Level and Time Horizon

102. Internationally, there has been significant discussion about the appropriate statistical safety level and time horizon for capital requirements. At present, the best practice seems to be implementation of a safety level for those risks where credible loss distributions are available and the use of judgment otherwise. Thus, no overall formula determination of statistical safety is sufficiently credible at present (even though some jurisdictions have stated an aim). The U.S. has, therefore, preferred an approach of calibrating the individual formula risk components and then utilizing financial analysis and market knowledge to verify that the overall capital is appropriate, utilizing financial analysis and market knowledge. We believe this is consistent with practice in other jurisdictions.

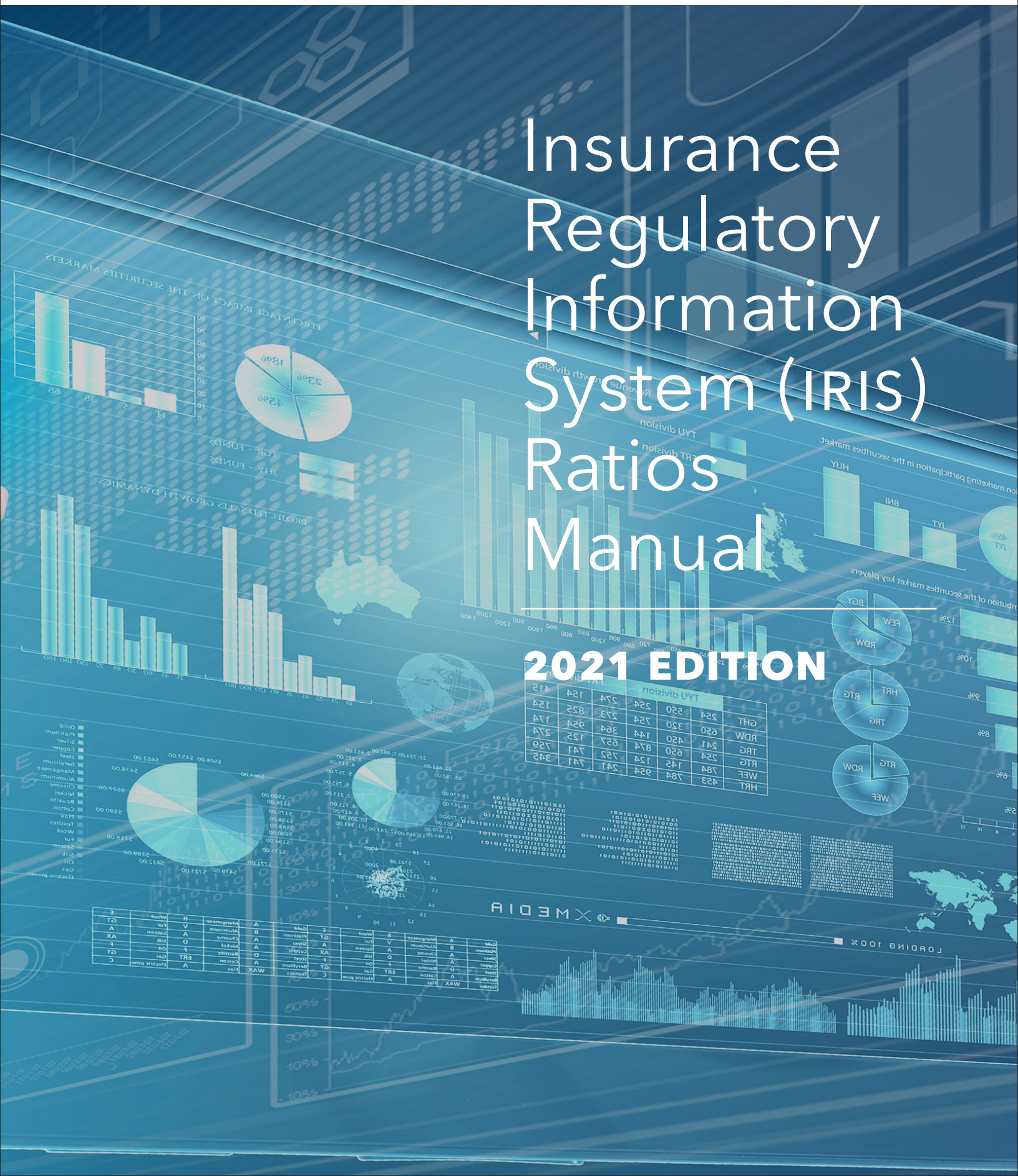
103. In the past in the U.S., time horizons have often been selected for individual risks where data was available. The time horizons selected vary by risk. According to the American Academy of Actuaries, the time horizon for individual factors in the life insurance RBC has been consistent with the time period where risks could cause rapid deterioration in statutory solvency. For example, bonds were modeled over 10 years, the industry average time-to-maturity and mortgages were modeled to their maturity, with a portfolio average time to maturity of seven years.[6] Going forward, regulators expect to recommend that every evaluation of formula factors for individual risks that is grounded in credible historical data be supported, where possible, by an underlying safety level and time horizon. The rationale for choice of the specific statistical parameters must be clearly documented and include reasoning for application of additional regulatory judgment. Where there is not a credible base of data to draw from, the rationale for regulator choice of a risk factor must be clear and transparent.

Timing

104. Just as has occurred since the RBC formulas were originally adopted, changes to improve the RBC formulas will be considered over time in order to enhance regulatory oversight of statutory solvency and to ensure that trigger levels for regulatory action are set appropriately.

[6] American Academy of Actuaries (AAA), www.actuary.org/pdf/life/American_Academy_of_Actuaries_SMI_RBC-Report.pdf.

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS



Insurance Regulatory Information System (IRIS) Ratios Manual

2021 EDITION

The National Association of Insurance Commissioners (NAIC) is the U.S. standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia and five U.S. territories. Through the NAIC, state insurance regulators establish standards and best practices, conduct peer review, and coordinate their regulatory oversight. NAIC staff supports these efforts and represents the collective views of state regulators domestically and internationally. NAIC members, together with the central resources of the NAIC, form the national system of state-based insurance regulation in the U.S.

For more information, visit **www.naic.org**.

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Insurance Regulatory Information Systems (IRIS) Manual

IRIS Ratios Manual for Property/Casualty and Life/Accident & Health

2021 Edition

NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

The NAIC is the authoritative source for insurance industry information. Our expert solutions support the efforts of regulators, insurers and researchers by providing detailed and comprehensive insurance information. The NAIC offers a wide range of publications in the following categories:

Accounting & Reporting
Information about statutory accounting principles and the procedures necessary for filing financial annual statements and conducting risk-based capital calculations.

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Important answers to common questions about auto, home, health and life insurance — as well as buyer's guides on annuities, long-term care insurance and Medicare supplement plans.

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PROCEDURES OF THE FINANCIAL ANAYLSIS SOLVENCY TOOLS (E) WORKING GROUP IN CONNECTION WITH PROPOSED AMENDMENTS TO THE *INSURANCE REGULATORY INFORMATION SYSTEM (IRIS)*

The following establishes procedures of the Financial Analysis Solvency Tools (E) Working Group ("the Working Group") for proposed changes, amendments and/or modifications to the NAIC *Insurance Regulatory Information System (IRIS)* ("IRIS").

1. The Working Group may consider relevant proposals to change IRIS at any conference call, interim or national meeting ("the meeting") throughout the year as scheduled by the Working Group.

2. If a proposal for suggested changes, amendments, and/or modifications is submitted to, or filed with, NAIC staff support it may be considered at the next regularly scheduled meeting of the Working Group.

3. The Working Group publishes a formal submission form and instructions that can be used to submit proposals and is available on the Group's webpage. However, proposals may also be submitted in an alternate format, provided that they are stated in a concise and complete format. In addition, if another NAIC committee, task force, or working group is known to have considered this proposal, that committee, task force, or working group should provide any relevant information.

4. Any proposal that would change IRIS will be effective for the annual filing period in the year following the NAIC Fall National Meeting (i.e. of the preceding year) in which it was adopted (e.g., a change proposed to be effective for December 31, 2021 annual filing must be adopted no later than the 2021 Fall National Meeting).

5. Upon receipt of a proposal, the Working Group will review the proposal at the next scheduled meeting and determine whether to consider the proposal for public comment. The public comment period shall be thirty days unless extended by the Working Group. The Working Group will consider comments received on each proposal at its next meeting and take action. Proposals under consideration may be deferred by the Working Group until the following scheduled meeting. The Working Group may form an ad hoc group to study the proposal, if needed. The Working Group may also refer proposals to other NAIC committees for technical expertise or review. If a proposal has been referred to another NAIC committee, the proposal will come off the Working Group's agenda until a response has been received.

6. NAIC staff support will prepare an agenda inclusive of all proposed changes. The agenda and relevant materials shall be sent via e-mail to each member of the Working Group, interested regulators, and interested parties, as well as posted to the Working Group's webpage approximately 5-10 business days prior to the next regularly scheduled meeting during which the proposal would be considered.

7. In rare instances, or where emergency action may be required, suggested changes and amendments can be considered as an exception to the above stated process and timeline based on a two-thirds majority consent of the Working Group members present.

8. NAIC staff support will publish the IRIS Manual on or about November 1 each year. NAIC staff will post to the NAIC Publications website any material subsequent corrections to these publications.

EXAMINATION OVERSIGHT (E) TASK FORCE
FINANCIAL ANALYSIS SOLVENCY TOOLS WORKING GROUP

SUBMIT TO
NAIC – KC
By June 1, 2022

IRIS Proposed Revision Form

INSTRUCTIONS	FOR NAIC USE ONLY
1. Complete this form for each IRIS proposal. Under "Identification of Item(s) to be Changed," include section & page number, line or item identifier. 2. All attachments should be presented in a format wherein new language is underscored and deletions struck through. 3. Please consider whether this revision proposal is also addressed elsewhere in the IRIS. 4. CAUTION: before completing this form, please read additional instructions on reverse side of this form.	DISPOSITION [ ] ADOPTED [ ] REJECTED [ ] DEFERRED [ ] OTHER (SPECIFY) [ ] _____
DATE: _____ NAME: _____ TITLE: _____ STATE: _____ ADDRESS: _____ TELEPHONE: _____ CONTACT PERSON: _____	NOTES

IRIS RATIO NAME TO WHICH PROPOSAL APPLIES

If STATEMENT TYPE SPECIFIC, ALSO IDENTIFY THE TYPE:

[ ] Life/A&H [ ] Property & Casualty

IDENTIFICATION OF ITEM(S) TO BE CHANGED

REASON OR JUSTIFICATION FOR CHANGE **
(STATE, IN SPECIFIC TERMS, THE BENEFIT TO BE DERIVED FROM THIS PROPOSAL)

**** This section must be completed on all forms.**

Additional Instructions and Information

The Financial Analysis Solvency Tools (E) Working Group meets via conference call to consider proposed changes to the NAIC Insurance Regulatory Information System (IRIS). Suggestions to the IRIS should be submitted by **June 1, 2022**. Send proposals via email to Ralph Villegas, Life/Health Financial Analysis Manager, rvillegas@naic.org; or send to Rodney Good, Property/Casualty Financial Analysis Manager, rgood@naic.org. Original copies may be sent to:

National Association of Insurance Commissioners
Financial Analysis & Examination Unit
Financial Regulatory Services Department
1100 Walnut Street, Suite 1500
Kansas City, MO 64106-2197

For questions, call the Financial Analysis & Examination Unit at (816) 842-3600.

Proposed Revisions

- During the Working Group's review, changes proposed via this form will be considered along with an analysis conducted by the NAIC Financial Analysis & Examination Unit of the effectiveness and usefulness of procedures, ratio limits, and language.
- The Financial Analysis & Examination Unit also studies adopted changes to the Annual Statements and provides revision proposals to the Working Group. The Financial Analysis & Examination Unit automatically makes changes to the IRIS for minor changes, such as for page and line numbers.
- The IRIS ratios are automated on I-SITE. The IRIS is intended to be a dynamic tool. The Working Group is interested in feedback on both analytical and software features. Please contact the NAIC Help Desk at (816) 842-3600 before submitting a form. Many enhancements have been proposed which could not be implemented. Also, some proposals may relate to existing features that the Help Desk may be able to explain.

**** This section must be completed on all forms.**

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I. THE SYSTEM

Introduction

The NAIC Insurance Regulatory Information System (IRIS) is a collection of analytical solvency tools and databases designed to provide state insurance departments with an integrated approach to screening and analyzing the financial condition of insurers operating within their respective states. IRIS, developed by state insurance regulators participating in NAIC committees, is intended to assist state insurance departments in targeting resources to those insurers in greatest need of regulatory attention. IRIS is not intended to replace each state insurance department's own in-depth solvency monitoring efforts, such as financial analyses or examinations. This IRIS Manual is designed to assist state insurance departments and the public in understanding the IRIS ratios.

One of the most difficult tasks facing state insurance regulators is to make effective use of limited resources. All insurers are required to file financial statements with all of the states in which they are licensed to operate. No state is able to thoroughly review the financial condition of all licensed insurers immediately upon receipt of the financial statements. IRIS helps by providing solvency tools and databases that highlight those insurers that merit the highest priority in the allocation of the state insurance regulators' resources, thus directing those resources to the best possible use.

IRIS Ratio Application

The IRIS Ratio Application generates key financial ratio results based on financial information obtained from insurers' statutory annual financial statements. The ratio results are used in determining the level of regulatory attention required. The NAIC Financial Analysis & Examination Unit of Financial Regulatory Services Department, under the direction of the NAIC Financial Analysis Solvency Tools Working Group, conducts annual reviews of the ratios to ensure that each ratio is current and is relevant to solvency monitoring.

IRIS Ratio Reports are made available to state insurance regulators and interested parties. The reports list insurers alphabetically by type of insurer and include ratio results, usual ranges and identification of unusual values.

A ratio that falls outside the usual range is not necessarily considered adverse. In some years, it may not be unusual for financially stable insurers to have several ratios with results outside the usual range. For example, a rise or decline in the equity markets may result in a significant change in policyholders' surplus. Because surplus is used as the divisor in many of the ratio formulas, certain ratios may fall outside of their usual range.

The ratios and trends are valuable in identifying insurers likely to experience financial difficulties. The ratios are not, in themselves, indicative of adverse financial conditions. The ratios and range comparisons are automatically generated upon data submission, if all data elements are present in the submission. If data elements are submitted with data validation failures or material accounting errors, these failures/errors will be reflected in

the results. If amended data is received after the results have been generated, the ratio results will be recalculated.

Limitations

The IRIS ratios depend on the accuracy and standardization of the annual financial statements and electronic filings of insurers. The tool cannot identify a misstatement of financial condition or a financial statement not prepared in the proper or complete format. Also, there exists the possibility of data-processing errors.

The IRIS ratios have been reasonably effective in distinguishing between troubled and financially stable insurers. As previously stated, the results are not, in themselves, determinative of the financial condition of an insurer. The results are subject to individual insurer circumstances. The following caveats apply:

1. No state can rely on the tools' results as the state's only form of surveillance.

2. Important decisions, such as licensing, should not be based on the tools' results without further analysis or examination of the insurer.

3. Valid interpretation of the tools' results depends, to a considerable extent, on the judgment of financial analysts and examiners. An insurer's ratios may be outside the usual range because of unusual accounting methods, changes in corporate structure, restatements of prior periods, correction of errors in prior periods or other circumstances.

4. The criteria for determining usual range values and the usefulness of the IRIS ratios, although based on the recent experience of insurers becoming insolvent, may not be valid for future experience in different economic periods. For this reason, the components of the ratios are reviewed annually.

5. While the information contained in the IRIS reports is compiled in a manner and from sources believed to be reliable, its accuracy is not guaranteed.

For Life Insurers Only: The IRIS ratios do not include tests of reserve adequacy or strength; however, they do include a test of reserve consistency. The test of consistency may identify insurers that have problems with reserve calculation. However, the determination of reserve adequacy is one of the primary purposes of an on-site examination.

Merged Insurers

The IRIS ratio results of insurers that have entered into mergers during the previous year could be distorted. The distortion occurs if the prior year data used to calculate the ratios is obtained on a single-insurer basis. The ratios are calculated using prior year data obtained on the merged entity, if the merged data is provided by the insurer. Merged prior year data is obtained from insurers on a voluntary basis and is not subject to NAIC data-validation procedures or independent audit requirements.

Branded Risk Classifications

The IRIS Manual has been updated to include the branded risk(s) associated with each ratio. The table below provides definitions of each branded risk classification.

Branded Risk Classifications		
Risk	**Symbol**	**Description**
Credit	CR	Amounts actually collected or collectible are less than those contractually due, or payments are not remitted on a timely basis.
Legal	LG	Nonconformance with laws, rules and regulations, prescribed practices, or ethical standards (in any jurisdiction in which the entity operates) will result in a disruption in business and financial loss.
Liquidity	LQ	Inability to meet contractual obligations as they become due because of an inability to liquidate assets and/or obtain adequate funding without incurring unacceptable losses.
Market	MK	Movement in market rates or prices, such as interest rates, foreign exchange rates or equity prices adversely affect the reported and/or market value of the investments.
Operational	OP	The risk of financial loss resulting from inadequate or failed internal processes, personnel and systems, as well as unforeseen external events.
Pricing/ Underwriting	PR/UW	Pricing and underwriting practices are inadequate to provide for risks assumed.
Reputation	RP	Negative publicity, whether true or not, causes a decline in the customer base, costly litigation and/or revenue reductions.
Reserving	RV	Actual losses and/or or other contractual payments reflected in reported reserves or other liabilities will be greater than estimated.
Strategic	ST	Inability to implement an appropriate business plan, to make decisions, to allocate resources or to adapt to changes in the business environment will adversely affect competitive position and financial condition.

II. PROPERTY/CASUALTY RATIOS

This chapter describes the financial ratios of the statistical phase of IRIS and offers suggestions for interpreting ratio results as well as for determining the types of further analysis that need to be performed. The purpose of IRIS is to assist state insurance departments in allocating resources to those insurers in greatest need of regulatory attention.

The suggestions for analysis included in the discussion of each financial ratio are intended to assist state regulators in the interpretation of ratio results. The financial analyst or examiner should adjust the depth and direction of their analysis in accordance with their knowledge of the insurer and its particular circumstances.

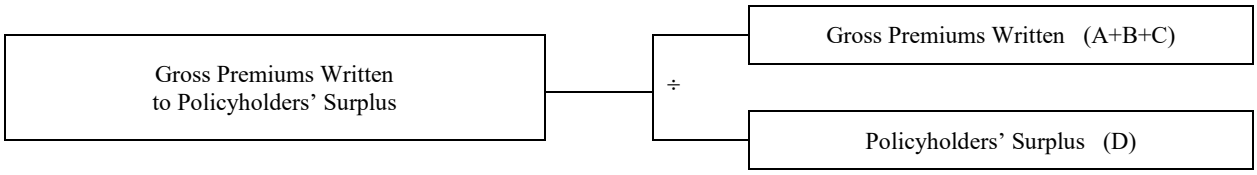
Analysis should begin with a review of the insurer's ratio results. The financial analyst or examiner should note the ratios reported outside the usual ranges and the amounts by which such values deviate from those ranges.

All ratios are reported as percentages, rounded to the nearest percent. For the Investment Yield ratio, results are rounded to the nearest tenth of one percent.

Ratio Ranges

	Ratio	Unusual Values Equal to or Over	Under
1.	Gross Premiums Written to Policyholders' Surplus	900	---
2.	Net Premiums Written to Policyholders' Surplus	300	---
3.	Change in Net Premiums Written	33	-33
4.	Surplus Aid to Policyholders' Surplus	15	---
5.	Two-Year Overall Operating Ratio	100	---
6.	Investment Yield	5.5	2.0
7.	Gross Change in Policyholders' Surplus	50	-10
8.	Change in Adjusted Policyholders' Surplus	25	-10
9.	Adjusted Liabilities to Liquid Assets	100	---
10.	Gross Agents' Balances (in collection) to Policyholders' Surplus	40	---
11.	One-Year Reserve Development to Policyholders' Surplus	20	---
12.	Two-Year Reserve Development to Policyholders' Surplus	20	---
13.	Estimated Current Reserve Deficiency to Policyholders' Surplus	25	---

P/C OVERALL RATIO 1 – GROSS PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS



A. Direct Premiums Written	Page 8, Line 35, Column 1	
B. Reinsurance Assumed – Affiliates	Page 8, Line 35, Column 2	
C. Reinsurance Assumed – Non-Affiliates	Page 8, Line 35, Column 3	
D. Policyholders' Surplus	Page 3, Line 37, Column 1	

Result = (A+B+C) / D * 100 _____ %

- If D is zero or negative, result is 999.
- If D is positive and (A+B+C) is negative, result is zero.

Policyholders' surplus provides a cushion for absorbing losses. This ratio measures the adequacy of the cushion without the effect of premiums ceded to reinsurers. The higher the ratio, the more risk the insurer bears in relation to policyholders' surplus.

The usual range for the ratio includes results up to 900 percent.

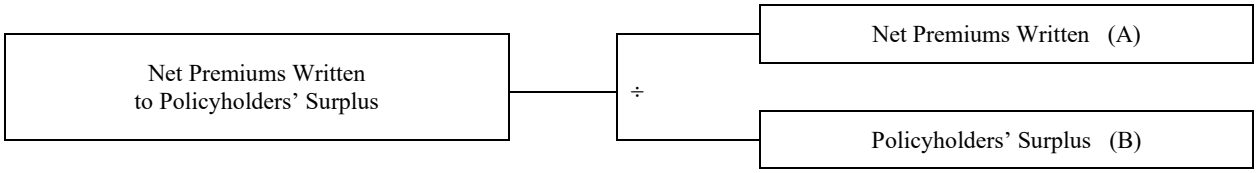
Problems could result from high gross premiums written in relation to policyholders' surplus. Consider the following:

1. An insurer's Gross Premiums Written to Policyholders' Surplus ratio reflects its policyholders' surplus exposure on all business written on a direct or assumed basis, without considering the effect of reinsurance. Therefore, it is important to review the result of this ratio with that of Ratio 2, Net Premiums Written to Policyholders' Surplus. If the disparity between the two ratios is large, the insurer may be relying heavily on reinsurance. To the extent that the reinsurers are financially sound and make prompt payments to the insurer, this may not be a problem. However, the insurer is liable to the policyholder whether or not the reinsurer makes good on its obligations to the insurer. Under a pooling arrangement, the results of the Gross Premiums Written to Policyholders' Surplus ratio may be skewed.
2. The distribution of premium between property and casualty lines of business should be reviewed when analyzing this ratio. Insurers with a larger portion of premium from long-tail lines, such as workers' compensation, should generally maintain a lower Gross Premiums Written to Policyholders' Surplus ratio, as it is more difficult to accurately estimate potential losses for these lines of business, resulting in a greater variability of losses.

3. The percentage of assumed business versus direct business should be reviewed to determine how the insurer generates business. In general, an insurer has less control over business it assumes. However, this does not mean that direct business is preferable to assumed business. Special consideration should be given to assumptions among affiliates that are not part of a pooling arrangement. Assumptions of this type should be investigated to determine the ceding entity's expertise in writing the line of business, its overall underwriting experience, the reason(s) for not retaining the business, and the reason(s) for not utilizing outside reinsurance.
4. Determine whether the insurer's business is profitable and whether profits are stable, increasing, or decreasing. Ratio 5, Two-Year Overall Operating Ratio, provides a measure of profitability for the preceding two years. In general, insurers with stable profits and adequate reinsurance coverage with financially sound reinsurers are better able to sustain a higher Gross Premiums Written to Policyholders' Surplus ratio than insurers with losses, unstable profits, or inadequate reinsurance coverage and/or financially unsound reinsurers.

Branded Risk(s): PR/UW, ST

P/C OVERALL RATIO 2 – NET PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS



A. Net Premiums Written	Page 8, Line 35, Column 6	_____
B. Policyholders' Surplus	Page 3, Line 37, Column 1	_____

Result = A / B * 100 _____ %

- If B is zero or negative, result is 999.
- If B is positive and A is negative, result is zero.

This ratio measures the adequacy of the policyholders' surplus cushion, net of the effects of premiums ceded to reinsurers. The higher the ratio, the more risk the insurer bears in relation to policyholders' surplus.

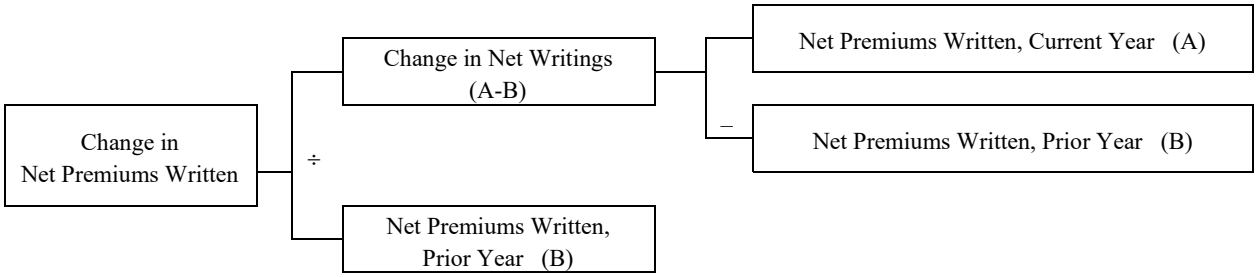
The usual range for the ratio includes results up to 300 percent.

Problems could result from high net premiums written in relation to policyholders' surplus. The following should be taken into consideration:

1. If the insurer is within a holding company system, consider reviewing this ratio on a consolidated basis. This consolidated approach provides a sense of the degree of group leverage.
2. The distribution of premium between property and liability lines of business should be reviewed when analyzing this ratio. Insurers with a larger portion of premium from long-tail lines, such as workers' compensation, should generally maintain a lower Net Premiums Written to Policyholders' Surplus ratio. It is more difficult to accurately estimate potential losses for long-tailed business lines, resulting in greater variability of losses.
3. Determine whether the insurer's business is profitable and whether profits are stable, increasing, or decreasing. Ratio 5, Two-Year Overall Operating Ratio, provides a measure of profitability for the preceding two years. In general, insurers with stable profits are better able to sustain a higher ratio of net writings to policyholders' surplus without undue risk than insurers with losses or unstable profits.
4. Determine the level of adequacy of the insurer's reinsurance protection against large losses. Review the reinsurance contracts that are in place to assess the level of retention.
5. Determine the quality of the reinsurers. For material cessions, review the reinsurers' financial statements to determine their financial stability. For those situations where collateral must be posted, ensure that the proper level and type of collateral is in place.

Branded Risk(s): PR/UW, ST

P/C OVERALL RATIO 3 – CHANGE IN NET PREMIUMS WRITTEN



A. Net Premiums Written, Current Year	Page 8, Line 35, Column 6	
B. Net Premiums Written, Prior Year	PY: Page 8, Line 35, Column 6	

Result = (A–B) / B * 100 %

- If A and B are both zero or negative, result is zero.
- If A is positive and B is zero or negative, result is 999.

Material changes in net premiums written could indicate a lack of stability in the insurer's operations and/or management. A large increase in premiums may indicate entry into new lines of business or geographic locations. In addition, such an increase in premiums may be a sign that the insurer is attempting to increase cash flow in order to meet current loss payments. A large decrease in premiums may indicate the discontinuance of certain lines of business, scaled back writings due to large losses in certain lines, loss of market share due to competition, or increased use of reinsurance.

The usual range for the ratio includes results from -33 percent to 33 percent.

Familiarity with the insurer's operations and history is useful in judging the importance of ratio results falling outside the range limits. Such results frequently indicate instability that may include dramatic shifts in product mix, marketing areas, or underwriting policy. When an unstable situation is apparent, further analysis or examination should be directed toward the following:

1. Determine whether the insurer's assets are properly valued and sufficient liquidity is available to meet cash demands. Consider the results of Ratio 9, Adjusted Liabilities to Liquid Assets, and review Schedules A through E.
2. Review the insurer's loss reserves and understand the level of adequacy by reviewing the reserve ratios (Ratios 11, 12, and 13) and Schedule P.

P/C OVERALL RATIO 3 – CHANGE IN NET PREMIUMS WRITTEN

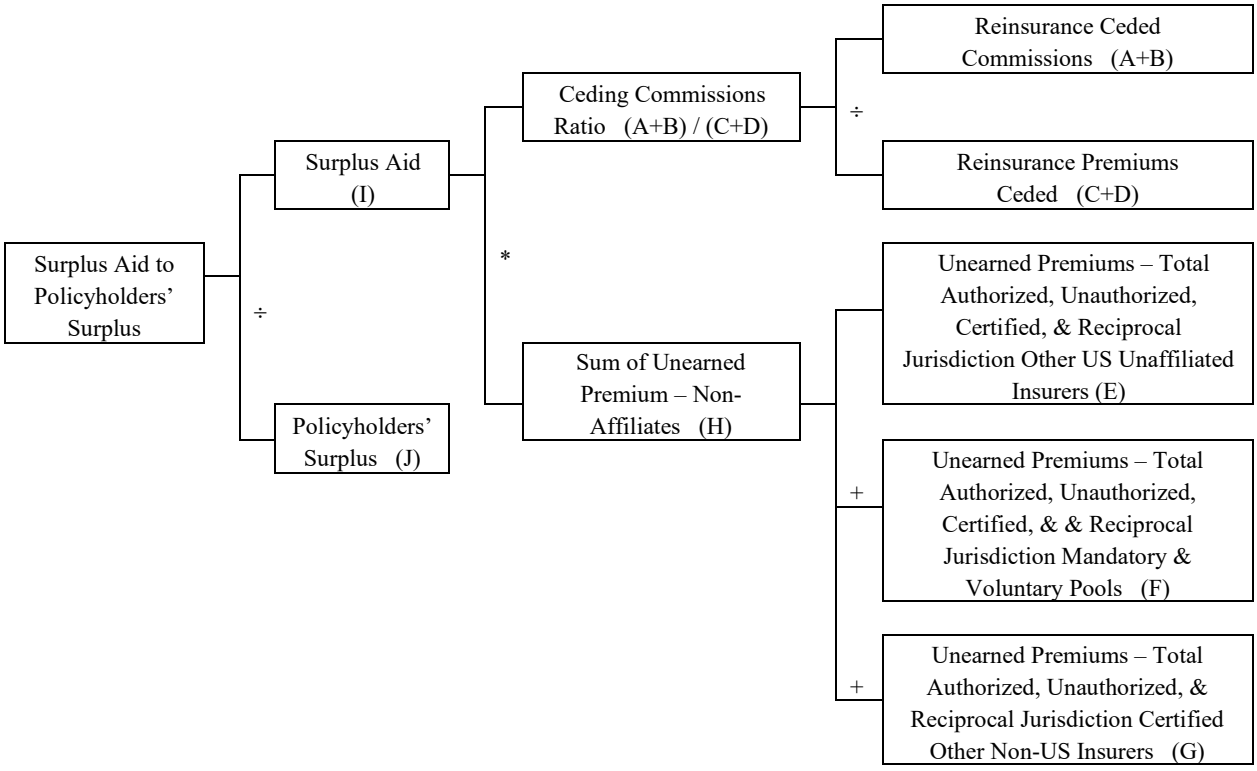
It is important to determine whether a notable increase in writings indicates that the insurer is increasing cash flow to pay current claims. This may be the case if the insurer's recent reserves were inadequate (see the one-year and two-year reserve development, Ratios 11 and 12). An increase in writings, particularly in the liability lines, to pay current claims provides a very short-term solution to underlying problems and quickly increases the risk of insolvency.

An increase in writings does not necessarily indicate difficulties that would threaten an insurer's solvency if they are accompanied by a reasonably low Net Premiums Written to Policyholders' Surplus ratio (Ratio 2), adequate reserving (Ratios 11, 12, and 13), profitable operations (Ratio 5), and a relatively stable product mix.

A decrease in net premiums written with stable gross writings may indicate that an insurer is attempting to increase cash flow related to ceding commissions from non-affiliated reinsurance. A review of Surplus Aid to Policyholders' Surplus ratio (Ratio 4) may help in understanding ratio results below the usual lower range.

Branded Risk(s): PR/UW, ST

P/C OVERALL RATIO 4 – SURPLUS AID TO POLICYHOLDERS' SURPLUS



A. Reinsurance Ceded Commissions	Page 11, Line 2.3, Column 2	
B. Reinsurance Ceded Contingent Commissions	Page 11, Line 2.6, Column 2	
C. Reinsurance Premiums Ceded – Affiliates	Page 8, Line 35, Column 4	
D. Reinsurance Premiums Ceded – Non-Affiliates	Page 8, Line 35, Column 5	
E. Unearned Premiums – Total Authorized, Unauthorized, Certified, & Reciprocal Jurisdiction Other US Unaffiliated Insurers	Page 22, Line (0999999 + 2399999 + 3799999 + 5199999), Column 13, * 1000	
F. Unearned Premiums – Total Authorized, Unauthorized, Certified & Reciprocal Jurisdiction Mandatory and Voluntary Pools	Page 22, Line (1099999 + 1199999 + 2499999 + 2599999 + 3899999 + 3999999 + 5299999 + 5399999), Column 13, * 1000	
G. Unearned Premiums – Total Authorized, Unauthorized, Certified & Reciprocal Jurisdiction Other Non-US Insurers	Page 22, Line (1299999 + 2699999 + 4099999 + 5499999), Column 13, * 1000	
H. Sum of Unearned Premiums (E+F+G)		
I. Surplus Aid = [(A+B) / (C+D)] * H		
J. Policyholders' Surplus	Page 3, Line 37, Column 1	

Result = I / J * 100 _____ %

- If (C+D) or I is zero or negative, result is zero.
- If I is positive and J is zero or negative, result is 999.

The use of surplus aid reinsurance treaties may be an indication that company management believes policyholders' surplus to be inadequate. Additionally, the continued solvency of insurers with a large portion of policyholders' surplus resulting from surplus aid may depend on the continuing participation in the treaty with the reinsurer.

P/C OVERALL RATIO 4 – SURPLUS AID TO POLICYHOLDERS' SURPLUS

The usual range for the ratio includes results less than 15 percent.

The Surplus Aid to Policyholders' Surplus ratio is important for the following reasons:

1. The existence of significant amounts of surplus aid may be an indication that policyholders' surplus is inadequate.
2. Surplus aid could improve results on other ratios enough to conceal important areas of concern.

For the reasons previously stated, all insurers with ratios greater than 15 percent should be given careful scrutiny regardless of their scores on other ratios. The following ratio results should be recalculated with policyholders' surplus adjusted to remove surplus aid:

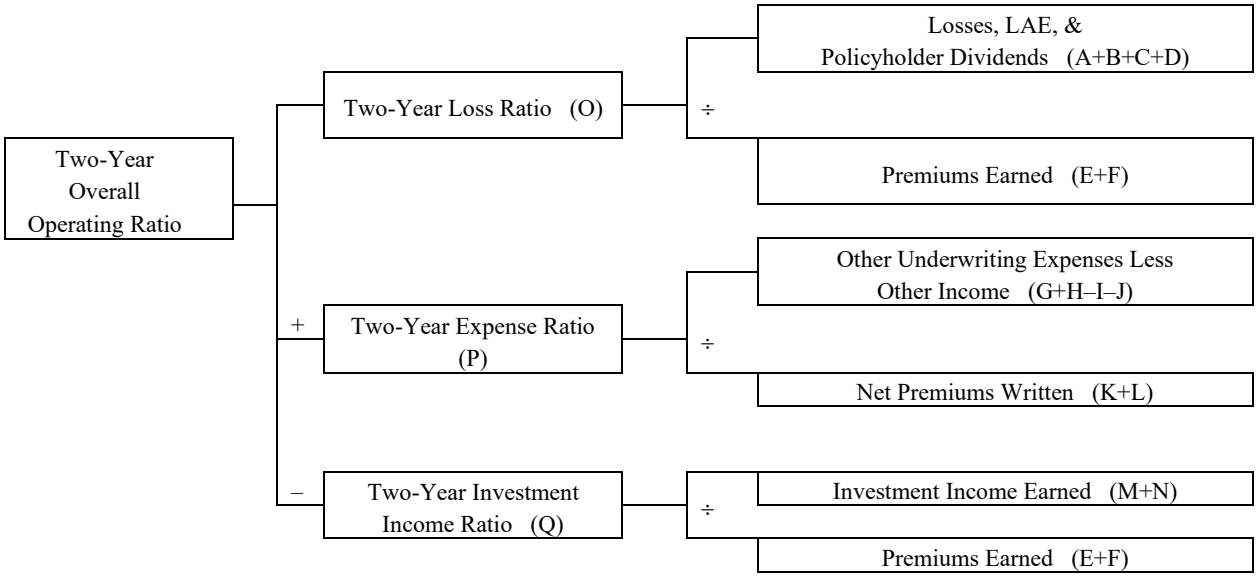
1. Gross and Net Premiums Written to Policyholders' Surplus (Ratios 1 and 2).
2. Gross Change in Policyholders' Surplus (Ratio 7). The previous year's policyholders' surplus should also be adjusted to remove surplus aid.
3. Gross Agents' Balances (in collection) to Policyholders' Surplus (Ratio 10).
4. Estimated Current Reserve Deficiency to Policyholders' Surplus (Ratio 13).

These adjustments can be made without recalculating the numerator. Divide the result for each ratio by the difference between one and the surplus aid ratio result expressed as a decimal. This recalculation is not recommended if Ratio 4 result is greater than 100 percent.

If an insurer's IRIS value falls outside the usual range for several of the above ratios, they should be given higher priority. Reinsurance treaties of all insurers with a Surplus Aid to Policyholders' Surplus ratio of more than 15 percent should be reviewed. This analysis should determine the potential impact on the insurer's solvency should the treaty be canceled.

Branded Risk(s): PR/UW, ST

P/C PROFITABILITY RATIO 5 – TWO-YEAR OVERALL OPERATING RATIO



A. Losses and LAE Incurred, Current Year	Page 4, Line 2 + 3, Column 1	
B. Losses and LAE Incurred, Prior Year	PY: Page 4, Line 2 + 3, Column 1	
C. Dividends to Policyholders, Current Year	Page 4, Line 17, Column 1	
D. Dividends to Policyholders, Prior Year	PY: Page 4, Line 17, Column 1	
E. Premiums Earned, Current Year	Page 4, Line 1, Column 1	
F. Premiums Earned, Prior Year	PY: Page 4, Line 1, Column 1	
G. Other Underwriting Exp & Write-ins, Current Year	Page 4, Line 4 + 5, Column 1	
H. Other Underwriting Exp & Write-ins, Prior Year	PY: Page 4, Line 4 + 5, Column 1	
I. Total Other Income, Current Year	Page 4, Line 15, Column 1	
J. Total Other Income, Prior Year	PY: Page 4, Line 15, Column 1	
K. Net Premiums Written, Current Year	Page 8, Line 35, Column 6	
L. Net Premiums Written, Prior Year	PY: Page 8, Line 35, Column 6	
M. Net Investment Income Earned, Current Year	Page 4, Line 9, Column 1	
N. Net Investment Income Earned, Prior Year	PY: Page 4, Line 9, Column 1	
O. Loss Ratio = 100 * [(A+B+C+D) / (E+F)]		%
P. Expense Ratio = 100 * [(G+H–I–J) / (K+L)]		%
Q. Investment Income Ratio =100 * [(M+N) / (E+F)]		%

Result = O+P–Q %

- If (A+B+C+D+G+H–I–J–M–N) is zero or negative, result is zero.
- If (E+F) or (K+L) is zero or negative, result is 999.

The Two-Year Overall Operating Ratio is a measure of the profitability of an insurance company. Ultimately, the profitability of the business is a principal determinant of the insurer's financial stability and solvency.

P/C PROFITABILITY RATIO 5 – TWO-YEAR OVERALL OPERATING RATIO

The usual range for the ratio includes results less than 100 percent. A Two-Year Overall Operating Ratio below 100 percent indicates an operating profit and a ratio result above 100 percent indicates an operating loss. Analysis of the Two-Year Overall Operating Ratio is helpful in determining the reasons behind the insurer's poor performance, whether it is due to a high loss ratio, a high expense ratio, or a low return on investments. When analyzing the result, consider the result of Ratio 11, One-Year Reserve Development to Policyholders' Surplus, and Ratio 13, Estimated Current Reserve Deficiency to Policyholders' Surplus, because prior year reserve development or current reserve deficiency may understate or overstate the true operating position of an insurer. For an insurer with a result outside the usual range on Ratio 11, the analyst should recalculate this ratio after eliminating the prior year development to obtain a more accurate picture of the insurer's current operating position.

A high loss ratio may be the result of large amounts of losses incurred on poorly developed lines of business and/or reserve strengthening on certain lines of business. Loss adjustment expenses may be high due to inflated claim adjustment fees on adverse business.

A high expense ratio may be due to high commission and brokerage fees as well as excessive salaries and other operating expenses.

The subtraction of the investment income ratio allows insurers a credit for their investment earnings to offset underwriting losses. The investment income ratio should be reviewed to understand the components that impact the Two-Year Overall Operating Ratio.

Branded Risk(s): OP

P/C PROFITABILITY RATIO 6 – INVESTMENT YIELD

Investment Yield		Net Investment Income Earned (G)
	÷	Average Cash and Invested Assets, Current and Prior Year (A+B+C+D–E–F–G)

A. Total Cash and Invested Assets, Current Year	Page 2, Line 12, Column 3	
B. Total Cash and Invested Assets, Prior Year	PY: Page 2, Line 12, Column 3	
C. Investment Inc. Due & Accrd, Current Year	Page 2, Line 14, Column 3	
D. Investment Inc. Due & Accrd, Prior Year	PY: Page 2, Line 14, Column 3	
E. Borrowed Money, Current Year	Page 3, Line 8, Column 1	
F. Borrowed Money, Prior Year	PY: Page 3, Line 8, Column 1	
G. Net Investment Income Earned	Page 4, Line 9, Column 1	

Result = [G / (A+B+C+D–E–F–G)] * 200 _____ %

- Limit result to a minimum of zero.

The Investment Yield ratio provides the percentage of annual income on an investment portfolio.

The usual range for the ratio includes results greater than 2.0 percent and less than 5.5 percent.

The analyst should review the types of investments reported in the annual financial statement, Schedules A through E, and the yield on each type of investment as reported on the Exhibit of Net Investment Income to determine the cause of a high or low investment yield.

Low yields may be caused by:

1. Speculative Investments
   These investments occasionally produce large capital gains over the long run but provide little income in the interim. Analysis should focus on the proper valuation of these investments and the determination of their stability and liquidity.
2. Large Investments in Affiliated Entities Under the Control of the Company
   Analysis should focus on the appropriateness of these investments, their value, and their liquidity.
3. Large Investments in Home Office Facilities
   Analysis should focus on the ability of the insurer to afford its facilities while maintaining liquidity. Also, review the adequacy of the amount of rent charged to underwriting expenses and credited to investment income.

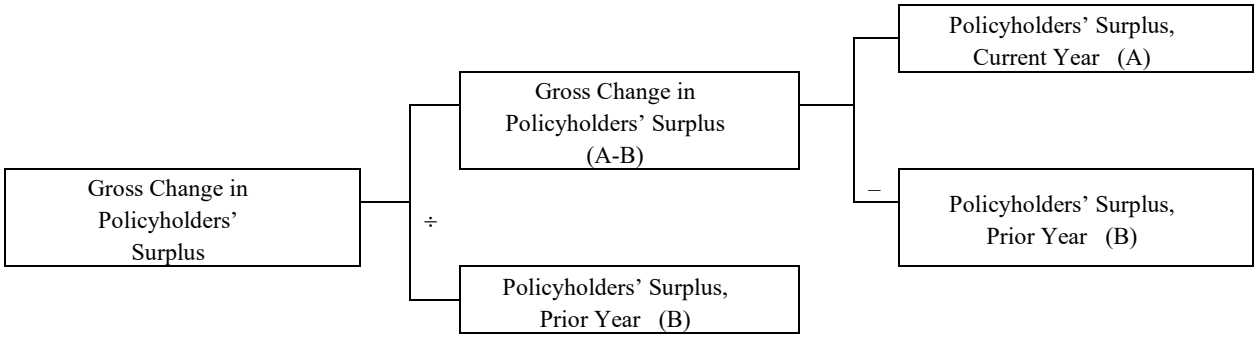
4. Considerable Investments in Tax-Exempt Bonds
   Analysis should focus on an estimate of the current fair value of these securities, which may be substantially less than the book/adjusted carrying value. If an insurer is currently paying federal income taxes and has large amounts of tax-exempt securities, its after-tax yield could be comparable to that of other insurers with a substantially higher before-tax yield derived from taxable securities. This type of investment philosophy is viewed as conservative.
5. Significant Interest Payments on Borrowed Money
   Large borrowings by an insurer may result in significant interest payments, which will reduce the insurer's investment yield. Some reinsurance contracts may also require interest payments, which will also reduce the yield. In either instance, apart from the reduction in investment yield, these situations should be investigated further to determine if they are symptomatic of other problems such as lack of liquidity.
6. Extraordinarily High Investment Expenses
   Although an insurer may be investing in assets that would be expected to provide an adequate return, investment expenses and other deductions from investment income may be reducing the net investment yield.

High yields may be caused by:

1. Investments in High-Risk Instruments
   High-risk instruments could excessively leverage surplus and may fall outside statutory limitations.
2. Extraordinary Dividend Payments from Subsidiaries to the Parent
   Review dividend laws for the insurer's state of domicile.

Branded Risk(s): LQ, MK, ST

P/C PROFITABILITY RATIO 7 – GROSS CHANGE IN POLICYHOLDERS' SURPLUS



A. Policyholders' Surplus, Current Year	Page 3, Line 37, Column 1	
B. Policyholders' Surplus, Prior Year	PY: Page 3, Line 37, Column 1	

Result = (A–B) / B * 100 %

- If A is zero or negative, result is -99.
- If A is positive and B is zero or negative, result is 999.

The Gross Change in Policyholders' Surplus ratio is the ultimate measure of improvement or deterioration in the insurer's financial condition during the year.

The usual range for the ratio includes results less than 50 percent and greater than -10 percent.

The lower range (-10 percent) is set more conservatively since a decrease in policyholders' surplus is a cause for concern. The upper range (50 percent) is used because a number of insolvent insurers report dramatic increases in policyholders' surplus prior to insolvency. Large increases in policyholders' surplus may be an indication of instability and may sometimes be related to the shifting of capital from other companies within a group, significant growth, or mergers and acquisitions.

If the ratio result falls below -10 percent, further analysis should be directed at determining the reasons for the change and whether these factors will be repeated in future years. This analysis compares the changes to policyholders' surplus for the two years and identifies the major factors affecting increases or decreases in policyholders' surplus, including but not limited to:

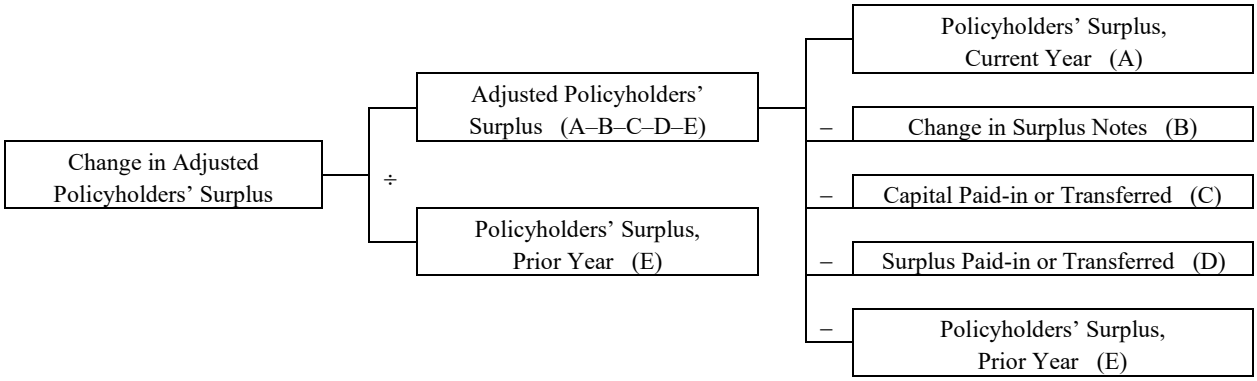
1. Net income (also review Ratio 5, Two-Year Overall Operating Ratio).
2. Unrealized capital gains or losses. Review the Exhibit of Capital Gains (Losses) in the annual financial statement and compare the current components to the prior year-end components to determine which categories of investments are responsible for the changes in unrealized capital gains or losses. Determine whether a change in common stock was caused by decreases in the value of subsidiaries. If so, analyze the subsidiary to determine any solvency concerns.

Review the insurer's investments and the supporting annual financial statement Schedules A through E. Determine whether changes in unrealized gains or losses were in line with changes experienced by other insurers investing in similar classes of assets during the same time period. If large unrealized losses have occurred, understand the steps the insurer took to protect it against further losses. If large unrealized gains have occurred, determine whether this was attributable to stock market increases, which could create a temporary rise in surplus.

3. To view the collective effects of a change in surplus notes, capital paid-in or transferred, and surplus paid-in or transferred, a review of Ratio 8, Change in Adjusted Policyholders' Surplus, is suggested.
4. Dividends to stockholders.
5. Changes in nonadmitted assets. Review the Exhibit of Nonadmitted Assets in the annual financial statement.
6. Changes in surplus aid from reinsurance. Review Ratio 4, Surplus Aid to Policyholders' Surplus.
7. Accounting changes and corrections of errors. Review Notes to Financial Statement #2 to determine the nature of the changes. Determine whether the insurer's changes are consistent with changes experienced by other insurers with similar lines of business. Understand whether the changes will have a material impact on current year operations and/or future periods.
8. Change in net deferred income tax. Review Notes to Financial Statement #9 to obtain a greater understanding of the sources of the insurer's book/tax differences and the changes in these items during the current year.
9. Change in ownership or program direction.

Branded Risk(s): OP, ST

P/C PROFITABILITY RATIO 8 – CHANGE IN ADJUSTED POLICYHOLDERS' SURPLUS



A.	Policyholders' Surplus, Current Year	Page 3, Line 37, Column 1	
B.	Change in Surplus Notes	Page 4, Line 29, Column 1	
C.	Capital Paid-in or Transferred	Page 4, Line 32.1 + 32.2 + 32.3, Column 1	
D.	Surplus Paid-in or Transferred	Page 4, Line 33.1 + 33.2 + 33.3, Column 1	
E.	Policyholders' Surplus, Prior Year	PY: Page 3, Line 37, Column 1	

Result = 100 * [(A–B–C–D–E) / ABS(E)] _____ %

- If A is zero or negative, result is -99.
- If A is positive and E is zero or negative, result is 999.

This ratio measures the improvement or deterioration in the insurer's financial condition during the year based on operational results. The usual range for the ratio includes results less than 25 percent and greater than -10 percent.

Changes in surplus notes, capital changes, and surplus adjustments are removed from policyholders' surplus in order to highlight the insurer's actual operations. In some cases, insurers may use capital contributions as a method of masking changes in surplus directly tied to operational issues. By removing these contributions, a more accurate picture of changes in policyholders' surplus from operations is obtained.

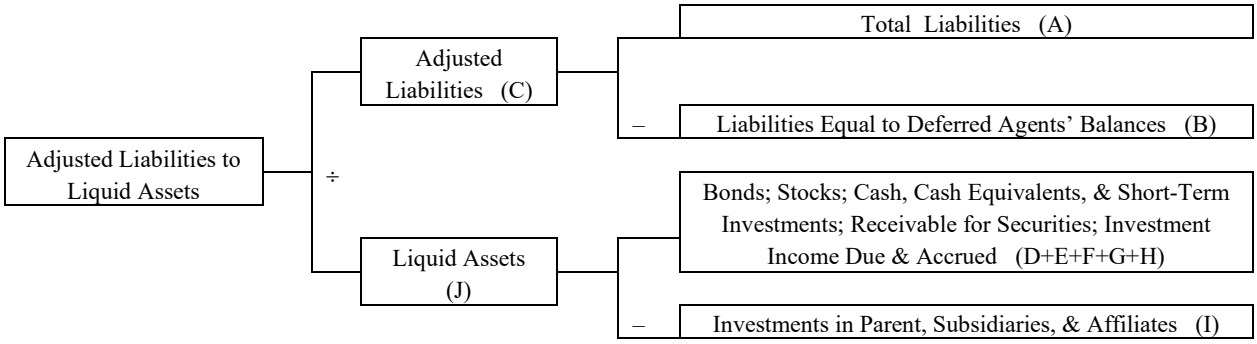
The lower range (-10 percent) is set more conservatively since a decrease in policyholders' surplus is a cause for concern. The upper range (25 percent) is used because a number of insolvent insurers have dramatic increases in policyholders' surplus prior to insolvency.

The following factors may contribute to increases or decreases in policyholders' surplus:

- Net income
- Net unrealized capital gains or losses
- Changes in nonadmitted assets
- Changes in provision for reinsurance
- Cumulative effect of changes in accounting principles
- Dividends to stockholders
- Changes in treasury stock
- Other gains or losses

Branded Risk(s): OP, ST

P/C LIQUIDITY RATIO 9 – ADJUSTED LIABILITIES TO LIQUID ASSETS



A. Total Liabilities	Page 3, Line 28, Column 1	
B. Liabilities Equal to Deferred Agents' Balances	Page 2, Line 15.2, Column 3	
C. Adjusted Liabilities = (A–B)		
D. Bonds	Page 2, Line 1, Column 3	
E. Stocks, Preferred & Common	Page 2, Line 2.1 + 2.2, Column 3	
F. Cash, Cash Equivalents & Short-Term Investments	Page 2, Line 5, Column 3	
G. Receivable for Securities	Page 2, Line 9, Column 3	
H. Investment Income Due & Accrued	Page 2, Line 14, Column 3	
I. Investments in Parent, Subsidiaries, & Affiliates	Page 17, Line 42 + 43 + 44 + 45, Column 1	
J. Liquid Assets = (D+E+F+G+H–I)		

Result = C / J * 100 %

- If J is zero or negative, result is 999.

The Adjusted Liabilities to Liquid Assets ratio is a measure of the insurer's ability to meet short-term obligations. It also provides a rough indication of the possible implications for policyholders if liquidation becomes necessary. Total liabilities are adjusted to remove the amount of liabilities equal to deferred agents' balances. Agents' balances deferred and not yet due is not a liquid asset. Therefore, an adjustment is made to remove the corresponding liability. Note that bonds are included in this ratio at their annual book/adjusted carrying value, which is not necessarily equal to their fair value.

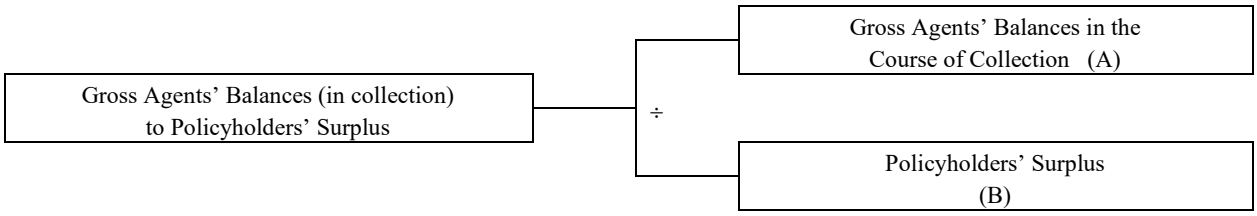
The usual range for the ratio includes results below 100 percent.

Analysis has shown that many insurers who become insolvent report increasing Adjusted Liabilities to Liquid Assets in their final years. Therefore, in interpreting the result of this ratio, it is important to consider its trend, as well as the current year result. Often, insurers maintaining large deposits with reinsured companies have unusually high ratio results. The deposits are excluded from liquid assets but the offsetting reinsurance liabilities are included in total liabilities.

Further analysis of an insurer with a high Adjusted Liabilities to Liquid Assets ratio should focus on the adequacy of reserves and on proper valuation, mix, and liquidity of assets to determine whether the insurer will be able to meet its obligations to policyholders.

Branded Risk(s): LQ

P/C LIQUIDITY RATIO 10 – GROSS AGENTS' BALANCES (IN COLLECTION) TO POLICYHOLDERS' SURPLUS



A. Gross Agents' Balances in the Course of Collection	Page 2, Line 15.1, Column 3	
B. Policyholders' Surplus	Page 3, Line 37, Column 1	

Result = A / B * 100 %

- If A is zero or negative, result is zero.
- If A is positive and B is zero or negative, result is 999.

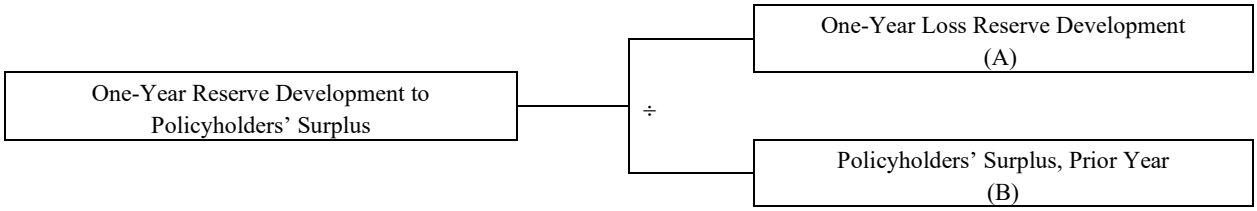
This ratio measures agents' balances booked as written and billed to agents in relation to the insurer's policyholders' surplus.

The usual range for the ratio includes results less than 40 percent.

If the amount of agents' balances is of concern, further analysis should determine whether agents' balances that are more than 90 days old may have been included as an admitted asset. With regard to reinsurance companies, agents' balances represent amounts due from reinsured companies that, in many cases, are subject to regulation. For reinsurers, premium amounts due may be offset against losses payable to the same insurer in the event of insolvency.

Branded Risk(s): CR

P/C RESERVE RATIO 11 – ONE-YEAR RESERVE DEVELOPMENT TO POLICYHOLDERS' SURPLUS



A. One-Year Loss Reserve Development	Page 34, Part 2, Line 12, Column 11 * 1000	
B. Policyholders' Surplus, Prior Year	PY: Page 3, Line 37, Column 1	

Result = A / B * 100 %

- If A is positive and B is zero or negative, result is 999.

This ratio measures the development of unpaid loss and loss adjustment expenses based on loss and loss adjustment expenses reported one year prior.

The estimate of losses outstanding a year prior and up to the current statement date is the sum of the current reserves for those losses still outstanding plus the payments on those losses made during the past year. The difference between this current estimate and the reserves that were established at the end of the prior year is the one-year reserve development. If the current estimate is greater than the prior year reserves, reserves are deficient. If the current estimate is less than the prior year reserves, reserves are redundant. A positive ratio result indicates a deficiency, while a negative result indicates a redundancy.

The usual range for the ratio includes results less than 20 percent.

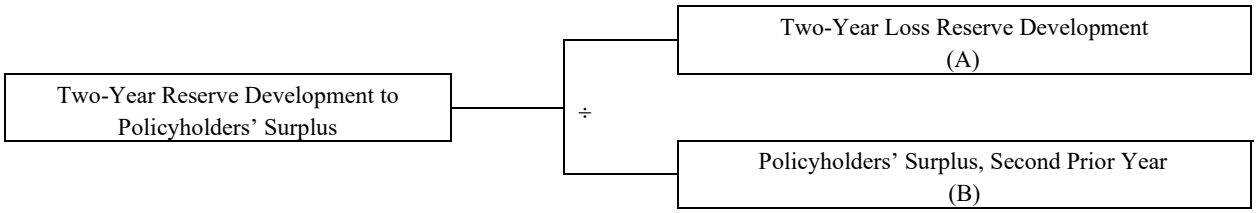
For insurers with reserves that appear to be deficient, further analysis should focus on determining which lines of business and which accident years resulted in the deficiency. The amount of deficiency for each line of business and accident year may be determined from Schedule P, Part 2.

If the insurer's ratio results consistently show adverse development and/or Ratio 12, Two-Year Reserve Development to Policyholders' Surplus, result is consistently worse than the One-Year Reserve Development to Policyholders' Surplus ratio, the insurer may be intentionally understating its reserves and deficiencies are appearing as losses paid. Significant increases in this ratio might also be indicative of reserve strengthening, while significant decreases might be indicative of current reserve understatements.

An analysis of Schedule P may assist in determining the reasons for reserve deficiencies such as payments in excess of the amounts reserved. However, an on-site examination may be required to resolve any serious questions regarding the adequacy of reserves.

Branded Risk(s): RV

P/C RESERVE RATIO 12 – TWO-YEAR RESERVE DEVELOPMENT TO POLICYHOLDERS' SURPLUS



A. Two-Year Loss Reserve Development	Page 34, Part 2, Line 12, Column 12 * 1000	
B. Policyholders' Surplus, Second Prior Year	2nd PY: Page 3, Line 37, Column 1	

Result = A / B * 100 %

- If A is positive and B is zero or negative, result is 999.

This ratio measures the development of unpaid loss and loss adjustment expenses based on loss and loss adjustment expenses reported two years prior. The two-year reserve development is the sum of the current reserves for losses incurred more than two years prior, plus payments on those losses during the past two years, minus reserves established for those losses two years earlier.

Negative results indicate that reserves originally set were redundant and claims have been settled at less than their original estimate. Positive results indicate that reserves were deficient and have since developed adversely. If the insurer's ratio results consistently show adverse development and/or the two-year reserve development to policyholders' surplus ratio result is consistently worse than the one-year reserve development to policyholders' surplus, the insurer may be intentionally understating its reserves.

The following could cause adverse ratio results:

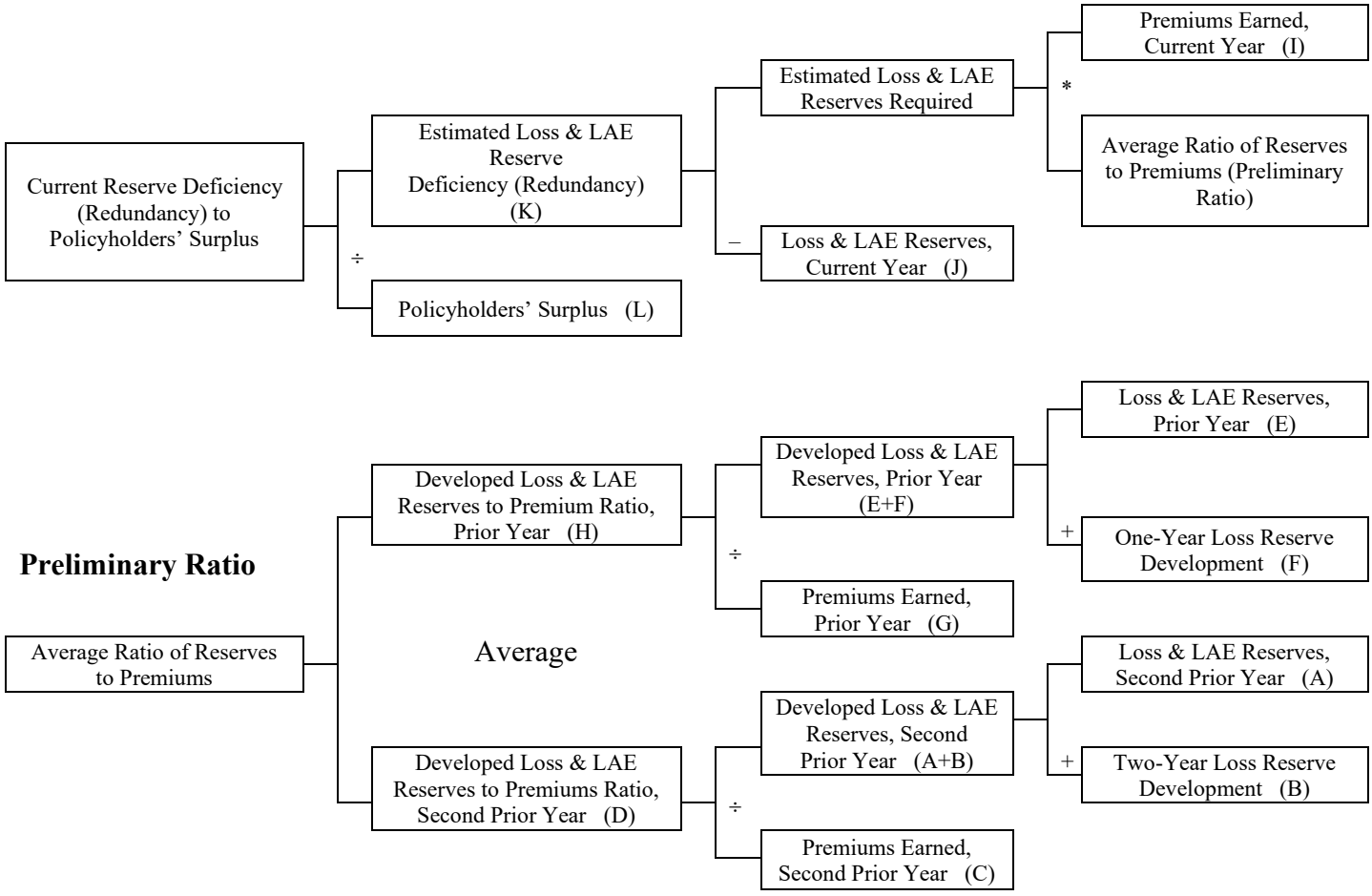
- Strengthening of deficient loss and LAE reserves held at the end of the second prior year-end
- Write-off of paid and unpaid losses for uncollectible reinsurance
- Commutation of ceded reinsurance
- Change in tabular reserve discounts

The usual range for the ratio includes results less than 20 percent.

For suggestions on interpreting ratio results and further analysis, refer to the comments on Ratio 11, One-Year Reserve Development to Policyholders' Surplus.

Branded Risk(s): RV

P/C RESERVE RATIO 13 – EST. CURR. RESERVE DEFICIENCY TO POLICYHOLDERS' SURPLUS



A. Loss & LAE Reserves, Second Prior Year	2nd PY: Page 3, Line 1 + 3, Column 1	
B. Two-Year Loss Reserve Development	Page 34, Part 2, Line 12, Column 12 * 1000	
C. Premiums Earned, Second Prior Year	2nd PY: Page 4, Line 1, Column 1	
D. Developed Loss & LAE Reserves to Premiums Ratio, Second Prior Year = [(A+B) / C]		%
• If C is zero, negative, or less than L/10, D = H		
E. Loss & LAE Reserves, Prior Year	PY: Page 3, Line 1 + 3, Column 1	
F. One-Year Loss Reserve Development	Page 34, Part 2, Line 12, Column 11 *1000	
G. Premiums Earned, Prior Year	PY: Page 4, Line 1, Column 1	
H. Developed Loss & LAE Reserves to Premium Ratio, Prior Year = [(E+F) / G]		%
I. Premiums Earned, Current Year	Page 4, Line 1, Column 1	
J. Loss & LAE Reserves, Current Year	Page 3, Line 1 + 3, Column 1	
K. Estimated Loss & LAE Reserve Deficiency (Redundancy) = {[1/2 * (D+H)] * I} – J		
• If G is zero, negative, or less than L/10, K = zero		
L. Policyholders' Surplus	Page 3, Line 37, Column 1	

Result = K / L * 100 %

- If K is positive and L is zero or negative, result is 999.
- If K and L are both zero or negative, result is zero.

P/C RESERVE RATIO 13 – EST. CURR. RESERVE DEFICIENCY TO POLICYHOLDERS' SURPLUS

This ratio provides an estimate on the adequacy of current reserves. This estimated deficiency is the difference between the estimated reserves required by the insurer and the actual reserves maintained.

The usual range for the ratio includes results less than 25 percent.

The results of this ratio can be distorted by significant changes in premium volume. A major increase in premiums earned can produce ratio results that indicate a deficiency greater than the actual deficiency or vice versa. However, within the normal range of variations in premiums from year to year, the distortion from changes in premiums is not significant.

Ratio results can also be affected by changes in product mix, especially if there is a change in the balance between property and liability lines of business. A significant shift in premiums from property to liability lines may cause this ratio to reflect understated reserve deficiencies. For insurers that have major shifts in product mix, the estimated current reserve deficiency or redundancy should be calculated separately for the major product groups using the approach described above for each.

Within these limitations, the ratio provides a reasonable estimate of the adequacy of reserves and can be used to determine whether an insurer has corrected reserve deficiencies that may have existed in the past.

Branded Risk(s): RV

III. LIFE, ACCIDENT & HEALTH RATIOS

This chapter describes the financial ratios and offers suggestions for interpreting ratio results and for determining the types of further analysis that need to be performed. The purpose of IRIS is to assist state insurance departments in allocating resources to those insurers in the greatest need of regulatory attention.

The suggestions for analysis included in the discussion of each financial ratio are intended to assist state regulators in the interpretation of ratio results. The examiner or financial analyst should adjust the depth and direction of their analysis in accordance with their knowledge of the insurer and its particular circumstances.

Analysis should begin with a review of the insurer's ratio results. The analyst should note the ratios on which the insurer has values outside the usual ranges and the amounts by which such values deviate from those ranges.

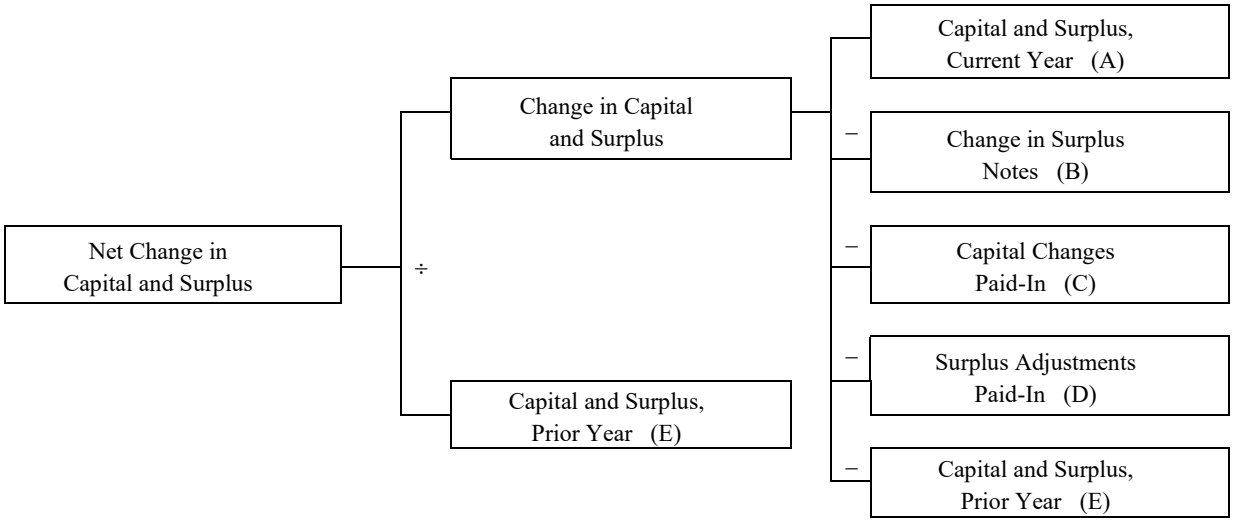
All ratios are reported as percentages, rounded to the nearest percent. For Ratios 10 and 11, results are rounded to the nearest tenth of one percent.

Ratio Ranges

	IRIS Ratio	Unusual Values Equal to or	
		Over	Under
1.	Net Change in Capital and Surplus	50	-10
2.	Gross Change in Capital and Surplus	50	-10
3.	Net Income to Total Income (Including Realized Capital Gains & Losses)	---	0
4.	Adequacy of Investment Income	900	125
5.	Nonadmitted to Admitted Assets	10	---
6.	Total Real Estate & Total Mortgage Loans to Cash & Invested Assets	30	---
7.	Total Affiliated Investments to Capital and Surplus	100	---
8.	Surplus Relief		
	(Over $5 Million Capital and Surplus)	30	-99
	($5 Million or Less Capital and Surplus)	10	-10
9.	Change in Premium	50	-10
10.	Change in Product Mix	5.0	---
11.	Change in Asset Mix	5.0	---
12.	Change in Reserving	20	-20

U indicates result is automatically considered unusual.
NR indicates no result is calculated.

LIFE/A&H OVERALL RATIO 1 – NET CHANGE IN CAPITAL AND SURPLUS



A. Capital and Surplus, Current Year	Page 3, Line 38, Column 1	
B. Change in Surplus Notes	Page 4, Line 48, Column 1	
C. Capital Changes Paid-In	Page 4, Line 50.1, Column 1	
D. Surplus Adjustments Paid-in	Page 4, Line 51.1, Column 1	
E. Capital and Surplus, Prior Year	PY: Page 3, Line 38, Column 1	

Result = (A–B–C–D–E) / E * 100 _____ %

- If A is zero or negative, result is -99.
- If E is zero or negative and A is positive, result is 999.
- If commenced business date is current year, no result is calculated (NR).

The Net Change in Capital and Surplus ratio is the most general measure of the improvement or deterioration in an insurer's financial condition during the year. It does not consider capital and surplus paid-in to reflect the impact of operations on capital and surplus.

The usual range includes all results greater than -10 percent and less than 50 percent. If the Change in Capital and Surplus ratio equals or falls below the -10 percent range limit or equals or goes above the 50 percent range limit, further analysis should be conducted to determine the reasons behind the decrease or increase in capital and surplus and whether a trend is developing.

Review the capital and surplus account on the Summary of Operations page of the annual financial statement. If the only significant change in capital and surplus resulted from operations (including capital gains and losses), refer to the suggestions discussed under Ratio 3, Net Income to Total Income.

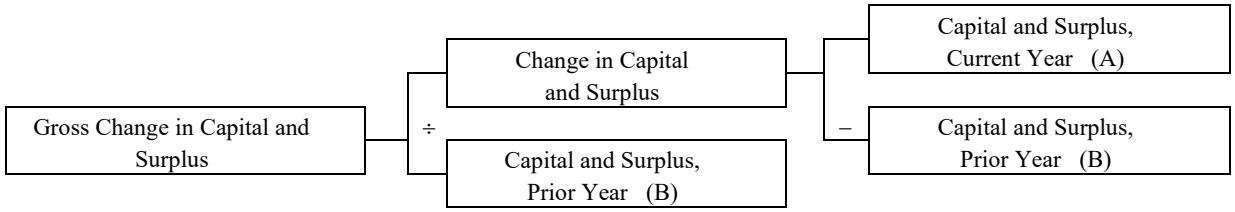
Factors other than operations likely to have a significant negative impact on capital and surplus include:

1. Stockholder dividends and refunds to members - Review the amount of dividends paid to stockholders, or refunds to members, to determine if it was appropriate, considering the insurer's net income (loss) and general financial condition. Evaluate the insurer's dividend, or refund, policy to determine if over the past five years it has been consistent with protecting the insurer's ability to meet its financial obligations to policyholders and members.
2. Change in unrealized capital gains and losses on investments - Review the Exhibit of Capital Gains (Losses) in the annual financial statement. Compare the current year-end components to the prior year-end components to determine which categories of investments are responsible for the changes in unrealized capital gains and losses. Determine if unrealized capital losses on common stock were caused by decreases in the value of affiliates. Review the affiliate(s) for potential solvency issues. Review the Assets page of the annual financial statement and Schedules A through DB to gain an understanding of how the insurer's assets are currently invested. Compare changes in unrealized capital gains and losses to those experienced by other insurers investing in the same classes of assets during the same time period. If large decreases have occurred, review the annual financial statement investment schedules, the MD&A and other available information to determine if the insurer has taken any action to protect itself against further losses. If large increases have occurred, based on current stock market and economic information, determine if improvements in the stock market may have created a temporary increase to capital and surplus.
3. Increases in reserves due to valuation changes – Review Exhibit 5A and review the insurer's result on Ratio 12, Change in Reserving. Also, review the results of the Department's last reserve valuation. If the insurer appears to have been under-reserved, determine if the recent change in valuation basis corrected the problem, or if further decreases in surplus may be anticipated.
4. Losses from nonadmitted assets – Determine the source (or sources) of the losses from the Assets page and the Exhibit of Nonadmitted Assets page of the annual financial statement. Review the insurer's result on Ratio 5, Nonadmitted to Admitted Assets, and refer to the suggestions for further analysis under the section "Life/A&H Investment Ratios" later in this manual.
5. Change in accounting principle – Review Notes to financial statement #2 to determine the nature of the changes. Compare the insurer's changes for consistency with changes experienced by other insurers with similar lines of business. Evaluate if the changes are expected to have a material impact on current year operations and future periods.
6. Change in net deferred income tax – Review Notes to financial statement #9 to obtain a greater understanding of the sources of the insurer's book/tax differences and the changes in these items during the current year.

Also, determine the amount of any increases in capital and surplus from the capital and surplus account on the Summary of Operations page of the annual financial statement. Determine whether these increases partially masked other significant decreases in capital and surplus and whether the decreases are likely to be repeated in future years. Keep in mind that capital and surplus paid-in is netted out of the Net Change in Capital and Surplus ratio. See Ratio 2, Gross Change in Capital and Surplus, which does not exclude paid-in capital and surplus from the calculation of the ratio.

Branded Risk(s): OP, ST

LIFE/A&H OVERALL RATIO 2 – GROSS CHANGE IN CAPITAL AND SURPLUS



A. Capital and Surplus, Current Year	Page 3, Line 38, Column 1	
B. Capital and Surplus, Prior Year	PY: Page 3, Line 38, Column 1	

Result = (A–B) / B * 100 %

- If A is zero or negative, result is -99.
- If B is zero or negative and A is positive, result is 999.
- If commenced business date is current year, no result is calculated (NR).

The Gross Change in Capital and Surplus ratio is a measure of improvement or deterioration in the insurer's financial condition during the year. It does take into account capital and surplus, including surplus notes, paid-in during the year. The usual range includes all results greater than -10 percent and less than 50 percent.

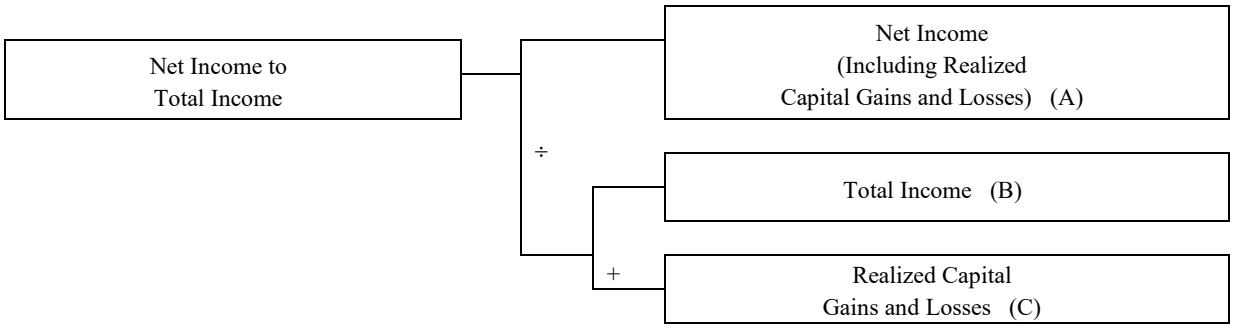
This ratio should be reviewed along with the review of Ratio 1, Net Change in Capital and Surplus. The interpretation comments that apply to Ratio 1 also apply to Ratio 2. However, if the insurer had paid-in capital and surplus during the year, the result for Ratio 2 may be significantly better than the result for Ratio 1. If capital and/or surplus were not paid-in during the year, the results of Ratios 1 and 2 should be the same.

If Ratio 2 is negative or reflects a result less than the lower limit of the range despite paid-in capital and surplus, the reasons for the decrease to capital and surplus should be analyzed to determine the causes of the decrease and if the causes represent a trend. Operational problems may be a possibility if the results are part of a trend over a period of years.

If the result of Ratio 2 is higher than the result of Ratio 1, it may indicate a strong parent willing to maintain an adequate level of capital and surplus in its subsidiary. In some instances, a review of the nature of the assets funding the additional capital and surplus paid-in may be appropriate. Factors such as the stability of the parent, whether the insurance group is publicly held and the parent's access to capital should be considered.

Branded Risk(s): OP, ST

LIFE/A&H OVERALL RATIO 3 – NET INCOME TO TOTAL INCOME
(INCLUDING REALIZED CAPITAL GAINS AND LOSSES)



A. Net Income	Page 4, Line 35, Column 1	
B. Total Income	Page 4, Line 9, Column 1	
C. Realized Capital Gains/Losses	Page 4, Line 34, Column 1	

Result = A / (B+C) * 100 %

- If (B+C) is zero or negative and A is positive, no result is calculated (NR).
- If (B+C) is zero or negative and A is zero or negative, result is automatically considered unusual (U).

Net income (including realized capital gains and losses) is a measure of the insurer's profitability. The usual range for this ratio includes all results greater than zero.

From the current and previous reports of financial ratio results, review the trend in the Net Income to Total Income ratio and review the income or loss by product line on the Analysis of Operations by Lines of Business page of the annual financial statement. Keep in mind that the insurer has considerable discretion in allocating expenses among product lines and that realized capital gains and losses are not allocated by line on the Analysis of Operations by Lines of Business page. If an insurer's losses result from a few product lines, the following analysis may be done for only those lines of business.

Five principal factors affect the insurer's net income, as reflected in this ratio:

1. Mortality and morbidity – Review the trend in benefits paid as a percentage of premiums by product line. If these ratios have increased, consider requesting supplemental information on mortality and morbidity experience and consult the department's actuary to determine the financial implications of the insurer's mortality and morbidity experience.
2. Adequacy of investment income – See Ratio 4, Adequacy of Investment Income. If investment income is significantly less than the interest required to maintain policy reserves and interest credited on deposit funds, the probability of financial difficulty is high and the increase in reserves understates the true expense associated with future benefit payments. On the other hand, if investment income is greater than the interest required to maintain policy reserves and interest credited on deposit funds, ultimately the business will probably be more profitable than indicated by the current net income or loss.

3. Commissions and expenses – High commissions and expenses could be caused by excessive spending or a high growth rate. Loose control over expenses, in general, may not pose an immediate threat to solvency. However, excessive spending may indicate that the insurer's management attitude and objectives are not consistent with the long-term financial security of policyholders.
4. Relationship of statutory reserve requirements to prevailing interest and mortality rates - When statutory reserve requirements are materially more conservative than prevailing interest and mortality rates, an insurer basing its rates for new business on prevailing rates will suffer an apparent loss from operations. This is particularly noticeable for insurers writing substantial amounts of annuity business when prevailing interest rates are materially higher than the maximum interest rate permitted for statutory reserves (6 percent for most states). Such insurers are exposed to the risk that interest rates may decline in the future to the point where their renewal premiums may prove to be inadequate. (See the results of Ratio 4, Adequacy of Investment Income).
5. Realized capital gains and losses – Life insurers are required to establish an interest maintenance reserve (IMR). The reserve captures the realized capital gains and losses resulting from changes in the general level of interest rates. These gains and losses are amortized into investment income over the approximate remaining life of the investments sold. Realized capital gains are reported in the Summary of Operations net of transfers to the IMR.

Branded Risk(s): OP

LIFE/A&H INVESTMENT RATIOS

For life insurers and fraternal societies, investments represent a particularly critical element in insurer performance and stability. Ratios 4, 5, 6 and 7 concern various investment aspects of significance in analyzing the financial condition of an insurer. Familiarize yourself with the insurer's investments on the Assets page of the annual financial statement and review the insurer's results on Ratio 11, Change in Asset Mix, to assist in determining the stability of the insurer's investment policy.

Review Ratio 5, Nonadmitted to Admitted Assets. For insurers with ratio results of 10 percent and above, review the Assets page and the Exhibit of Nonadmitted Assets page of the annual financial statement to determine the nature of the nonadmitted assets and the reasons for non-admission. Compare the amount of nonadmitted assets with capital and surplus to determine the impact of nonadmitted assets on the financial condition of the insurer.

Review the amount of investments in affiliated insurers and receivables from affiliates as a percentage of invested assets and as a percentage of capital and surplus (Ratio 7). If the amount is high, an insurer may experience illiquidity or a low yield. Large investments in affiliated insurers may also increase the overall risk to which an insurer is subject. Determine whether the insurer's investments in and amounts due from affiliates are consistent with protecting the interest of policyholders.

Review the insurer's investment in real estate and mortgages and the relationship of that investment to cash and invested assets (Ratio 6). A high result may indicate higher asset risk and possible liquidity concerns.

It is helpful to consider the insurer's investments from three points of view:

1. Risk – Certain classes of investments are generally more risky than others. For example, equity investments (such as stocks and real estate) tend to experience greater fluctuations in value than investments in debt (such as bonds and mortgage loans). Review the insurer's mix of assets. Compare the percentage of invested assets in equities with the ratios for similar insurers. Also, determine the percentage of each component of the asset valuation reserve to the appropriate investment in the various assets. Information provided in the annual financial statement with regard to derivative instruments should be reviewed carefully.

2. Return – Determine from the Exhibit of Net Investment Income the gross yield on each of the major classes of assets. Compare these to the interest requirements reflected in Exhibit 5 and the Interest Sensitive Life Insurance Products Report. This should show the degree of inadequacy of investment income resulting from large investments in assets that produce little or no current income. Some insurers may forego a certain amount of current income in the expectation of capital gains. Therefore, also compare

the insurer's capital gains and losses, by type of investment [from the Exhibit of Capital Gains (Losses)], with other insurers over a period of several years. If the insurer has experienced large gains or losses, review Schedules A through E and attempt to determine whether the insurer's investments may be unduly speculative.

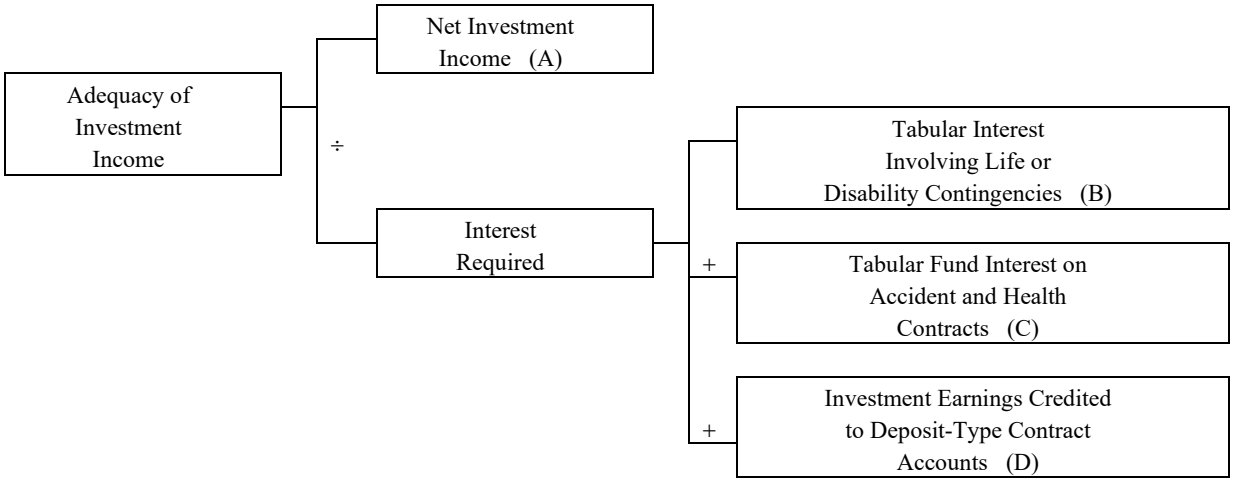
3. Liquidity – In the past, investment liquidity has been less important for life insurers than for accident and health and property/casualty insurers because of the long-term nature of the conventional life insurance contract. This has changed over the years. With many new products on the market, liquidity has become important to many life insurers. For any insurance company with a real and immediate potential for cash outflow, a problem arises if the realizable market value of investments is sufficiently below the statement value.

   Under the present system of statutory life insurance accounting, equity securities are carried at market value while other investments are generally valued at cost. Some cash outflow situations could arise from conditions such as a sudden large spurt of new issues involving considerable sales and issue expense, a slow attrition by a mature block of business with declining sales, or sudden demand for policy loans or cash surrenders.

   It is important when reviewing the distribution of an insurer's assets to consider 1) the possibility of cash outflow, as determined by the nature of the insurer's business; and 2) the ability of the insurer to withstand such a cash demand without undue deterioration of the asset portfolio. The summaries of the maturity distribution of bonds reported in Schedule D, Part 1A, short-term investment holdings reported in Schedule DA, Part 1 and the Cash Flow schedule of the annual financial statement are helpful in reviewing the insurer's liquidity.

   Because an asset adequacy analysis is required by the *Standard Valuation Law* and the accompanying *Actuarial Opinion and Memorandum Model Regulation*, the insurer's actuarial opinion and supporting actuarial memorandum (if requested) should be reviewed carefully.

LIFE/A&H INVESTMENT RATIO 4 – ADEQUACY OF INVESTMENT INCOME



A.	Net Investment Income	Page 4, Line 3, Column 1	_____
B.	Tabular Interest Involving Life or Disability Contingencies	Page 7.1, Line 4, Column 1 + Page 7.2, Line 4, Column 1 + Page 7.3, Line 4, Column 1 + Page 7.4, Line 4, Column 1	_____
C.	Tabular Fund Interest on A&H Contracts	Page 14, Exhibit of Aggregate Reserve for A&H Contracts, Line 18, Column 1	_____
D.	Investment Earnings Credited to Deposit-Type Contract Accounts	Page 15, Exhibit of Deposit-Type Contracts, Line 3, Column 1	_____

Result = A / (B+C+D) * 100 _____ %

- If (B+C+D) is zero, result is 999.
- If insurer has no beginning or ending reserves per page 7 of the annual financial statement and item B is zero, no result is calculated (NR).

This ratio indicates whether an insurer's investment income is adequate to meet the interest requirements of its reserves. The adequacy of investment income in meeting an insurer's interest obligations is a key element in an insurer's profitability.

The usual range includes all results greater than 125 percent and less than 900 percent.

A ratio of 125 percent or less may indicate that an insurer's investment yield is not adequate to meet its interest requirements. This may result from a low yield, or from interest guarantees or other interest requirements that may be too high for the investment environment of the insurer.

A ratio of 900 percent or more may indicate reporting errors concerning items of the interest required, as listed above, and should require an investigation concerning the method of determining interest required.

Analysis of the reasons for a low investment yield may reveal significant problems. Low yields may be caused by:

1. Speculative investments intended to produce large capital gains over the long run but providing little income in the interim – Analysis should focus on the proper valuation of these investments and a determination of their stability and liquidity. This includes a review of the hedging program and derivatives on Schedule DB, which may actually be speculative.
2. Large investments in affiliated companies or enterprises under the control of company management or owners – Analysis should focus on the propriety of these investments and their value and liquidity.
3. Large investments in home office facilities – Analysis should focus on the ability of the insurer to afford its facilities while maintaining liquidity and on the appropriateness of the amount of rent charged to underwriting expenses and credited to investment income.
4. Large investments in tax-exempt bonds – Analysis should focus on an estimate of the current market value of such securities, which might be substantially less than book/adjusted carrying value if the securities are long-term, tax-exempt bonds purchased many years ago. If an insurer is currently paying federal income taxes and has large amounts of tax-exempt securities, its after-tax yield would be comparable to that of other insurers with a substantially higher before-tax yield derived from taxable securities. Such an investment policy is often a sign of financial strength and stability.
5. Significant interest payments on borrowed money – Large borrowings by an insurer may result in significant interest payments, which will reduce the insurer's investment yield. Some reinsurance contracts may also require interest payments, which will also reduce the yield. In either instance, apart from the reduction in yield, these situations should be investigated further to determine if they are symptomatic of other problems, such as lack of liquidity.
6. Extraordinarily high investment expenses – Although an insurer may be investing in assets that would be expected to provide an adequate return, investment expenses and other deductions from investment income may be reducing the net investment yield below a point at which investment income is adequate.

While investment yields may be adequate, an insurer may have interest requirements that exceed the investment income received. This situation may be caused by:

1. Unreasonably high interest guarantees by the insurer – In order to sell its contracts, an insurer may have set guaranteed interest rates on its contracts at unreasonably high levels. If the guarantee period is too long, an insurer may be trapped in a period of declining interest rates with a guaranteed rate that is higher than the return it is able to realize on its investments.

2. Poor management of investments as they relate to the type of contracts an insurer may be writing – In the past, conventional life insurance products permitted long-term investments that matched the long-term nature of the contracts. Newer products require investments that match their particular requirements including cash flow.

See also the general comments on investments, "Life/A&H Investment Ratios," preceding this ratio.

Branded Risk(s): RV, MK, ST

LIFE/A&H INVESTMENT RATIO 5 – NONADMITTED TO ADMITTED ASSETS

Nonadmitted to Admitted Assets		Nonadmitted Assets (A)
	÷	
		Admitted Assets (B)

A. Nonadmitted Assets	Page 2, Line 28, Column 2	
B. Admitted Assets	Page 2, Line 28, Column 3	

Result = A / B * 100 %

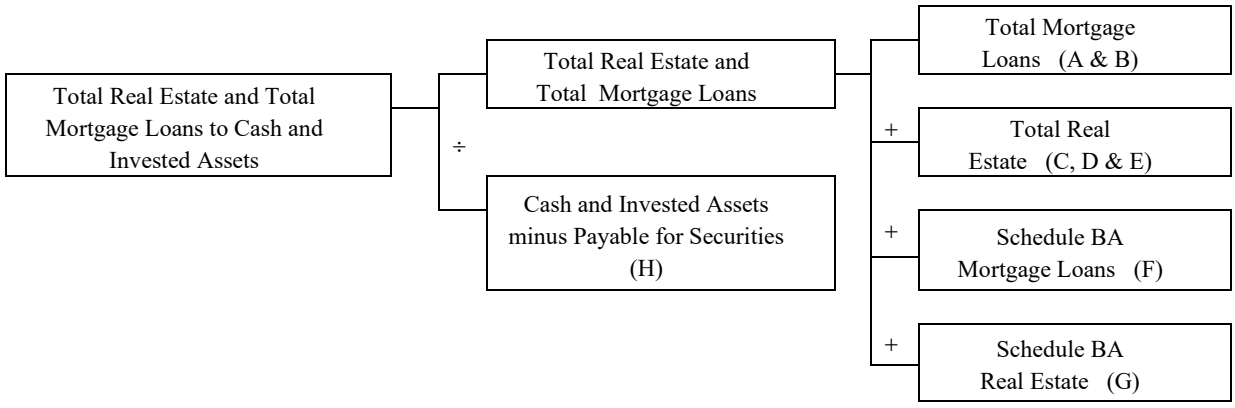
- If B is zero or negative and A is positive, result is 999.
- If A and B are both zero or negative, result is zero.

This ratio measures the degree to which an insurer has acquired nonadmitted assets that may represent either nonproductive assets or risky investments.

The usual range includes all results less than 10 percent. See the general comments on investments titled "Life/A&H Investment Ratios," preceding Ratio 4.

Branded Risk(s): CR, LQ

LIFE/A&H INVESTMENT RATIO 6 – TOTAL REAL ESTATE AND TOTAL MORTGAGE LOANS TO CASH AND INVESTED ASSETS



A. Mortgage Loans – First Liens	Page 2, Line 3.1, Column 3	
B. Mortgage Loans – Other	Page 2, Line 3.2, Column 3	
C. Real Estate – Properties Occupied by the Company	Page 2, Line 4.1, Column 3	
D. Real Estate – Properties Held for the Production of Income	Page 2, Line 4.2, Column 3	
E. Real Estate – Properties Held for Sale	Page 2, Line 4.3, Column 3	
F. Schedule BA – Mortgage Loans	Page E07, Line 1199999 + 1299999 + 2399999 + 2499999, Column 12	
G. Schedule BA – Real Estate	Page E07, Line 2199999 + 2299999, Column 12	
H. Cash and Invested Assets minus Payable for Securities	(Page 2, Line 12, Column 3) – (Page 3, Line 24.09, Column 1)	

Result = [(A+B+C+D+E+F+G) / H] * 100 %

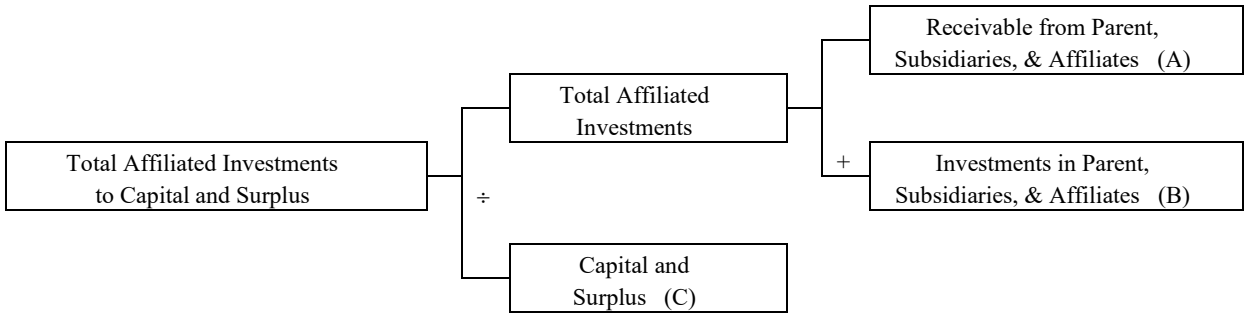
- If H is zero or negative and (A+B+C+D+E+F+G) is positive, result is 999.
- If (A+B+C+D+E+F+G) and H are both zero or negative, result is zero.

This ratio reflects the percentage of cash and invested assets that are invested in real estate and mortgage loans. Real estate and mortgage loans may be overstated. Excessive investment in real estate and mortgage loans, investment in non-income producing real estate, and overdue or restructured mortgage loans are relatively common sources of financial difficulty.

Results less than 30 percent are included in the usual range for all insurers. See the general comments on investments titled "Life/A&H Investment Ratios," preceding Ratio 4.

Branded Risk(s): CR, MK

LIFE/A&H INVESTMENT RATIO 7 – TOTAL AFFILIATED INVESTMENTS TO CAPITAL AND SURPLUS



A.	Receivable from Parent, Subs., & Affiliates	Page 2, Line 23, Column 3	_____
B.	Investments in Parent, Subs., & Affiliates	Page 23, Line 50, Column 1	_____
C.	Capital and Surplus	Page 3, Line 38, Column 1	_____

Result = (A+B) / C *100 _____ %

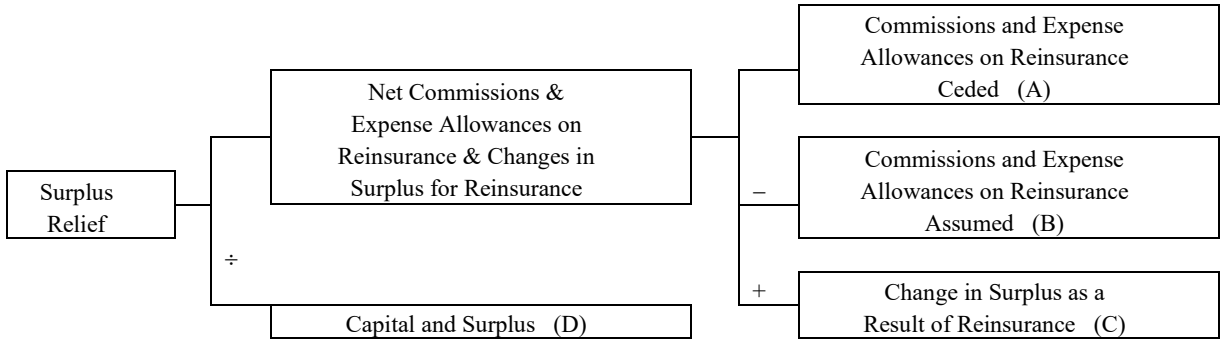
- If C is zero or negative and (A+B) is positive, result is 999.
- If (A+B) and C are zero or negative, result is zero.

This ratio is a measure of the amount of capital and surplus invested in affiliated investments and receivables that may not be liquid or available to meet policyholder obligations.

A relatively large value for this ratio should be questioned. The usual range includes all results less than 100 percent. See the general comments on investments titled "Life/A&H Investment Ratios," preceding Ratio 4.

Branded Risk(s): CR, LQ, MK

LIFE/A&H SURPLUS RELIEF RATIO 8 – SURPLUS RELIEF



A.	Comm. & Expense Allowances on Reinsurance Ceded	Page 6, Line 6, Column 1	
B.	Comm. & Expense Allowances on Reinsurance Assumed	Page 6, Line 22, Column 1	
C.	Change in Surplus as a Result of Reinsurance	Page 4, Line 51.4, Column 1	
D.	Capital and Surplus	Page 3, Line 38, Column 1	

Result = (A–B+C) / D * 100 %

- If D is zero or negative, result is 999.

A positive value for this ratio generally indicates a temporary increase to surplus because often no liability is established for the unearned portion of reinsurance commissions and expense allowances ceded. A large positive value for this ratio may indicate that company management believes its surplus is inadequate.

This ratio result will be negative for insurers with large amounts of reinsurance assumed in relation to direct business. An extreme negative value may indicate that the additional reserves required for reinsurance assumed are beginning to strain capital and surplus or that excessive commissions and expenses are being incurred by the insurer in acquiring this business.

Results greater than -10 percent and less than 10 percent are included in the usual range for those insurers with capital and surplus of $5 million or less. For insurers with capital and surplus in excess of $5 million, the usual range includes results which are greater than –99 percent and less than 30 percent.

Branded Risk(s): ST, PR/UW

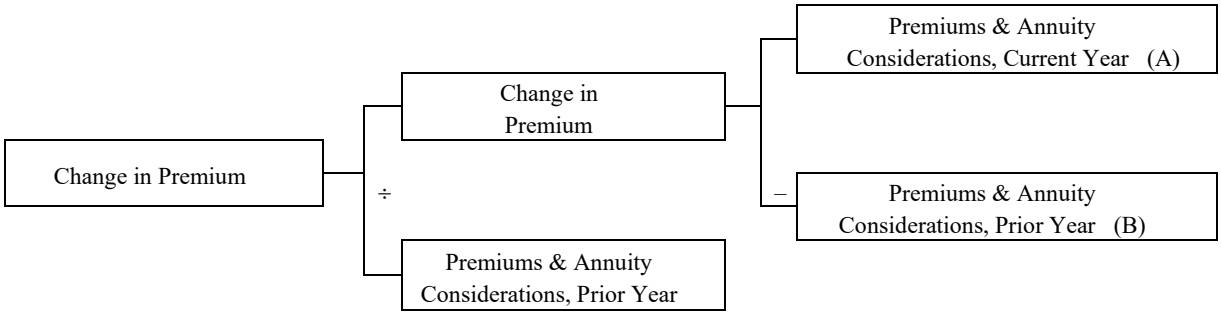
LIFE/A&H CHANGE IN OPERATIONS RATIOS

In evaluating the significance of the following ratios for a particular insurer, familiarity with the insurer's history, management and operations are of particular importance. If an insurer increases or decreases its premium rapidly, changes its mix of products or assets, or alters its ratio of reserve increases to premium, key areas should be reviewed: management's business plan, management's control of the situation, and knowledge and experience required to maintain financial strength while operations are changing dramatically.

The analyst should determine the reasons for the changes in operations. For example, rapid premium growth or a decision to cease writing one or more products may have been the result of changes in the sales and distributions systems, exiting or entering an insurance market, changes in the economic environment, product development, or changes in the insurer's business plan. A change in the business plan may be indicated by the following ratios and may result from a change in company ownership or management.

Changes in the asset mix may also be indicative of changes in ownership and management or changes in the business focus of the insurer. A review of the insurer's investment strategy would assist in understanding management's investment philosophy. Life and health insurers should be reviewed carefully during their first years under new ownership or management.

LIFE/A&H CHANGE IN OPERATIONS RATIO 9 – CHANGE IN PREMIUM



A.	Premiums & Annuity Considerations, Current Year	Page 50, Line 99, Column 2, 3, 4, 5, 7	
B.	Premiums & Annuity Considerations, Prior Year	PY: Page 50, Line 99, Column 2, 3, 4, 5, 7	

Result = (A–B) / B * 100 %

- If A and B are both zero or negative, result is zero.
- If B is zero or negative and A is positive, result is 999.
- If commenced business date is current year, no result is calculated (NR).

This ratio represents the percentage change in premium from the prior to the current year.

The usual range includes all results less than 50 percent and greater than -10 percent. See the general comments preceding this ratio, "Life/A&H Change in Operations Ratios."

Branded Risk(s): PR/UW

LIFE/A&H CHANGE IN OPERATIONS RATIO 10 – CHANGE IN PRODUCT MIX

		CURRENT YEAR AMOUNT (1)	CY % OF TOTAL (2)	PRIOR YEAR AMOUNT (3)	PY % OF TOTAL (4)	COL (2) LESS COL (4)% (5)
Premiums & Annuity Considerations Page 9, Line 20.4						
A.	Industrial Life, Column 2					
B.	Ordinary Life Ins, Column 3					
C.	Ind. Annuities, Column 4					
D.	Credit Life, Column 5					
E.	Group Life, Column 6					
F.	Group Annuities, Column 7					
G.	Group A&H, Column 8					
H.	Credit A&H, Column 9					
I.	Other A&H, Column 10					
J.	Total					
K.	Total of Ratio Column 5 Disregarding Sign					

Result = K / 9 _____ %

- If J for either current or prior year is zero or negative, no result is calculated (NR).
- Ratio is calculated as follows: First determine the percentage of premium from each product line for CY and PY. Next, determine the difference in the percentage of premium between the two years for each product line. Finally, the total of these differences, without regard to sign, is divided by the number of product lines to determine the change in the percentage of premium for the average product line.

The result of this ratio represents the average change in the percentage of total premium from each product line during the year. The product lines are those defined in Exhibit 1 – Part 1 – Premiums and Annuity Considerations page of the annual financial statement.

The usual range includes results less than 5 percent. See the general comments titled "Life/A&H Change in Operations Ratios," preceding Ratio 9.

Branded Risk(s): PR/UW

LIFE/A&H CHANGE IN OPERATIONS RATIO 11 – CHANGE IN ASSET MIX

Assets Page 2, Column 3		CURRENT YEAR AMOUNT (1)	CY % OF TOTAL (2)	PRIOR YEAR AMOUNT (3)	PY % OF TOTAL (4)	COL (2) LESS COL (4)% (5)
A.	Bonds – Line 1					
B.	Preferred Stocks – Line 2.1					
C.	Common Stocks – Line 2.2					
D.	Mortgage Loans – First Liens – Line 3.1					
E.	Mortgage Loans – Other – Line 3.2					
F.	Real Estate – Properties Occupied by Company – Line 4.1					
G.	Real Estate – Properties Held for the Production of Income – Line 4.2					
H.	Real Estates – Properties Held for Sale Line 4.3					
I.	Contract Loans – Line 6 minus inside amount 1					
J.	Premium Notes – Inside amount 1 of Line 6					
K.	Derivatives – Line 7					
L.	Cash, Cash Equivalents & Short-Term – Line 5					
M.	Other Invested Assets – Line 8					
N.	Receivable for Securities – Line 9 minus Payable for Securities – Page 3, Line 24.09, Column 1					
O.	Securities Lending Reinvested Collateral Assets – Line 10					
P.	Aggregate Write-Ins for Invested Assets – Line 11					
Q.	Total					
R.	Total of Ratio Column 5 Disregarding Sign					

Result = R / 16 _____ %

- If Q for either current or prior year is zero or negative, result is automatically considered unusual (U).
- Ratio is calculated as follows: First determine the percentage of total assets from each asset type for CY and PY. Next, determine the difference in the percentage of assets between the two years for each asset type. Finally, the total of these differences, without regard to sign, is divided by the number of asset types to determine the change in the percentage of assets for the average asset type.

This ratio result represents the average change in the percentage of total cash and invested assets for the classes of assets listed above less payable for securities from the Liabilities, Surplus and Other Funds page of the annual financial statement.

The usual range includes all results less than 5 percent. See the general comments on investments titled "Life/A&H Investment Ratios," preceding Ratio 4 and the comments titled "Life/A&H Change in Operations Ratios," preceding Ratio 9.
Branded Risk(s): CR, MK, ST

LIFE/A&H CHANGE IN OPERATIONS RATIO 12 – CHANGE IN RESERVING

		CURRENT YEAR	PRIOR YEAR
A. Increase in Agg. Reserves – Industrial Life	Page 6.1, Line 19, Column 2		
B. Increase in Agg. Reserves – Ordinary Life Ins.	Page 6.1, Line 19, Column 3, 4, 5, 6, 7, 8, 9, 11, 12		
C. Net Single Premiums – Industrial Life	Page 9, Line 10.4, Column 2		
D. Net Renewal Premiums – Industrial Life	Page 9, Line 19.4, Column 2		
E. Net Single Premiums – Ordinary Life Ins.	Page 9, Line 10.4, Column 3		
F. Net Renewal Premiums – Ordinary Life Ins.	Page 9, Line 19.4, Column 3		

Result = [(CY (A+B) / (C+D+E+F)) – (PY (A+B) / (C+D+E+F))] * 100

_____ %

- If (A+B) and (C+D+E+F) for current or prior year are both zero or negative, (A+B) / (C+D+E+F) = 0 for that year.
- If (A+B) is positive and (C+D+E+F) is zero or negative for current or prior year, (A+B) / (C+D+E+F) = 100% for that year.
- This ratio represents the number of percentage points of difference between the reserving ratio for current and prior years. For each of these years, the reserving ratio is equal to the aggregate increase in reserves for individual life insurance taken as a percentage of renewal and single premiums for individual life insurance.

Positive ratio results indicate an increase in this ratio from the prior year. Negative results indicate a decrease. The usual range of the number of percentage points of difference between the reserving ratios for current and prior years includes all results less than 20 percent but greater than -20 percent. For insurers with no industrial or ordinary life lines of business, a ratio value of zero, which is within the range of acceptability for the ratio, will be reported. See the comments titled “Life/A&H Change in Operations Ratios,” preceding Ratio 9.

Branded Risk(s): RV

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Due to file restrictions, please use the following links to access the files:

National Association of Insurance Commissioners Official Annual Statement Examples: The following companies post their annual statements online. Candidates may use these (or their own company's statements) as illustrations to better understand the annual statement but are not responsible for any company-specific data: (1) Allstate and (2) the Liberty Mutual Group.

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Nov. 19, 2015

Casualty Actuarial and Statistical (C) Task Force

Price Optimization White Paper

I. Scope

1. In this paper, the Casualty Actuarial and Statistical (C) Task Force provides background research on price optimization, identifies potential benefits and drawbacks to the use of price optimization, and presents options for state regulatory responses regarding the use of price optimization in ratemaking. The Task Force is not expressing an opinion on the policy decisions that have been or may be made by each state concerning rating practices that may incorporate price optimization.

2. The primary focus of the paper is on personal lines ratemaking. Ratemaking concepts and principles (e.g., cost-based actuarial indications or unfair discrimination) may have application to commercial lines of business, as well.

3. Though price optimization could be used in risk selection, marketing or other insurer operations, these issues are not addressed in this paper. The NAIC should consider whether these are issues that need to be addressed.

II. Introduction

4. Ratemaking is the process of establishing rates used in insurance or other risk transfer mechanisms. This process may involve a number of considerations, including estimates of future claims costs and expenses, profit and contingencies, marketing goals, competition, and legal restrictions. Actuaries play a key role in the ratemaking process and are generally responsible for determining the estimated costs of risk transfer. The advent of more sophisticated data mining tools and modeling techniques have allowed the use of more objective and detailed quantitative information for aspects of the rate-setting process for which insurers have traditionally relied on judgment or anecdotal evidence.

5. Making adjustments to actuarially indicated rates is not a new concept; it has often been described as "judgment." Insurers often considered how close they could get to the indicated need for premium without negatively affecting policyholder retention and how a given rate would affect the insurer's premium volume and expense ratio. Before the introduction of data-driven quantitative techniques, the answers to these questions were largely subjective. Historically, when judgment was applied, the changes were made on a broad level (e.g., an entire rating territory).

6. In recent years, through a process or technique referred to by many as "price optimization," insurers have started using big data (data mining of insurance and non-insurance databases of personal consumer information where permitted by law), advanced statistical modeling or both to select prices that differ from indicated rates at a very detailed or granular level. Formalized and

mechanized adjustments can be made to indicated rates for many risk classifications and, ultimately, perhaps even for individual insureds.

7. According to the Casualty Actuarial Society (CAS), until recently, companies had limited ability to quantitatively reflect individual consumer demand in pricing.[1] By measuring and using price elasticity of demand, an insurer can "optimize" prices to charge the greatest price without causing the consumer to switch to another insurer. It is this use of elasticity of demand that has led to criticisms that price optimization penalizes customers.

8. Critics object to insurers' use of price optimization when it results in unfairly discriminatory rates. Price optimization may use external, non-insurance databases to gather personal consumer information or detailed information about competitors' pricing to model consumer demand and predict the response of consumers to price changes. Some critics argue that price optimization has been developed to increase insurers' profits by raising premiums on individuals who are less likely to shop around for a better price, and many of these people are low-income consumers. The Consumer Federation of America (CFA) asserts that price optimization introduces a systematic component to rate setting unrelated to expected losses or expenses. The CFA has called price optimization unfairly discriminatory, claiming that it can result in drivers with the same risk profile being charged different rates.[2]

9. Regulators accept some deviations from indicated rates and rating factors. However, they are concerned that the use of sophisticated methods of price optimization could deviate from traditional ratemaking, extending beyond acceptable levels of adjustment to cost-based rates and resulting in prices that vary unfairly by policyholder. Regulators in each state determine the acceptable level of adjustment allowable based on state law and regulatory judgment.

10. In late 2013, the NAIC's Auto Insurance (C/D) Study Group began to study the use of price optimization in auto insurance. Because the topic of price optimization goes beyond auto insurance and requires a great deal of actuarial or statistical expertise, the Study Group asked the Task Force to perform any additional research necessary on the use of price optimization, including studying regulatory implications, and respond to the Study Group with a report or white paper documenting the relevant issues.

III. Background: State Rating Law, Actuarial Principles and Definitions

11. The basis for all rate regulation is established by the state law—both statutory and case law. State authority is derived from the inclusion in almost all states' laws that personal lines insurance "rates

1. Casualty Actuarial Society Committee on Ratemaking Price Optimization Working Party

2. Consumer Federation of America, March 31, 2014. "Insurance Commissioners Should Bar Industry Practice of Raising Rates on Customers Based on Shopping Habits," accessed at http://consumerfed.org/press_release/insurance-commissioners-should-bar-industry-practice-of-raising-rates-on-customers-based-on-shopping-habits/.

shall not be inadequate, excessive or unfairly discriminatory."[3] The NAIC has three model law guidelines related to rate regulation: 1) Property and Casualty Model Rating Law (File and Use Version) (#1775);[4] 2) Property and Casualty Model Rate and Policy Form Law Guideline (#1776);[5] and 3) Property and Casualty Model Rating Law (Prior Approval Version) (#1780).[6]

12. In Model #1775 and Model #1776, the description of "unfairly discriminatory rates" is as follows:

"Section 5. Rate Standards

Rates shall be made in accordance with the following provisions:

A. Rates shall not be excessive, inadequate, or unfairly discriminatory.

…

(3) Unfairly Discriminatory Rates. Unfair discrimination exists if, after allowing for practical limitations, price differentials fail to reflect equitably the differences in expected losses and expenses. …"[7]

In Model #1780,[8] a description of "unfairly discriminatory rates" is suggested to be adopted in regulation but does not provide wording for the description.

13. The actuarial profession utilizes ratemaking principles. The following are the four principles in the CAS "Statement of Principles Regarding Property and Casualty Insurance Ratemaking":

a. Principle 1: A rate is an estimate of the expected value of future costs.

b. Principle 2: A rate provides for all costs associated with the transfer of risk.

c. Principle 3: A rate provides for the costs associated with an individual risk transfer.

d. Principle 4: A rate is reasonable and not excessive, inadequate or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer. [9]

14. The following terms are used in this paper:

3. Illinois law only contains that requirement for workers' compensation and medical professional liability. Kentucky statute § 304.13-031 includes the requirement only when the market is not competitive.

4. NAIC model law Guideline 1775; NAIC Model Regulation Service – January 2010.

5. NAIC model law Guideline 1776; NAIC Model Regulation Service – October 2010.

6. NAIC model law Guideline 1780; NAIC Model Regulation Service – October 2010.

7. NAIC Guideline 1775: Property and Casualty Model Rating Law (File and Use Version), Model Regulation Service—January 2010
NAIC Guideline 1776: Property and Casualty Model Rate and Policy Form Law Guideline, Model Regulation Service—October 2010.

8. NAIC model law guideline "Property and Casualty Model Rating Law (Prior Approval Version) Guideline 1780, Model Regulation Service—October 2010.

9. Casualty Actuarial Society, 1988. *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, accessed at *www.casact.org/professionalism/standards/princip/sppcrate.pdf.*

a. In this paper, "price optimization" refers to the process of maximizing or minimizing a business metric using sophisticated tools and models to quantify business considerations. Examples of business metrics include marketing goals, profitability and policyholder retention.

b. "Actuarial judgment" is used in many of the actuarial methodologies in the rate-setting process (e.g., selection of loss development factors, trends, etc.). Actuarial Standard of Practice (ASOP) No. 1, *Introductory Actuarial Standard of Practice,* states that "the ASOPs frequently call upon actuaries to apply both training and experience to their professional assignments, recognizing that reasonable differences may arise when actuaries project the effect of uncertain events."[10] According to the CAS, "[i]nformed actuarial judgments can be used effectively in ratemaking."[11] Actuarial judgments are made throughout the ratemaking (as well as risk classification) process, including assumptions on the inputs and assessing the accuracy of the results. Price optimization is a tool and does not replace actuarial judgment in ratemaking; actuarial judgment remains a separate and distinct exercise that is fully consistent with and permitted by sound actuarial standards.

c. "Ratemaking" is "the process of establishing rates used in insurance or other risk transfer mechanisms. This process involves a number of considerations, including marketing goals, competition and legal restrictions, to the extent they affect the estimation of future costs associated with the transfer of risk."[12] Basic elements that go into the risk transfer estimate include claim and claim handling expense, underwriting expenses, policy acquisition and a reasonable profit.

d. A "cost-based" rate is an estimate of all future costs associated with an individual risk transfer and is developed from and consistent with the expected claims, claim handling expense, underwriting expenses, policy acquisition expense, a reasonable profit, investment income and other risk transfer costs.

e. The "actuarial indication" is also referred to as a "cost-based indication" and is an actuarially sound estimate of the cost to transfer covered risk from a policyholder to the insurer. These estimates are based on the data at hand, the analytical techniques used and actuarial judgment about the underlying cost drivers. There can be a variety of reasons why the actuarial indication could have limitations, such as low volume of data/credibility or a problem with data quality or biases in the analytical technique(s) used. Additionally, there could be changes that are not fully reflected in the data, such as internal company changes or changes in the external environment. The actuarial indication excludes adjustments that are not in accordance with actuarial principles.

f. "Price elasticity of demand" (commonly known as just "price elasticity") measures the rate of response of quantity demanded due to a price change. Price elasticity "is used to see how sensitive the demand for a good is to a price change. The higher the price elasticity, the more sensitive consumers are to price changes. A very high price elasticity suggests that when the price of a good goes up, consumers will buy a great deal less of it, and when the

10. Actuarial Standards Board, 2013. Actuarial Standard of Practice No. 1, *Introductory Actuarial Standard of Practice*.

11 Casualty Actuarial Society, 1988. *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, accessed at www.casact.org/professionalism/standards/princip/sppcrate.pdf.

12. Casualty Actuarial Society, 1988. *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*.

price of that good goes down, consumers will buy a great deal more. A very low price elasticity implies just the opposite—that changes in price have little influence on demand."[13]

g. A "rating plan" in the context of this paper is a structure of elements used to determine the premium to be charged a specific risk. The elements include a set of rules, risk classifications and sub-classifications, factors, discounts, surcharges, and fees applied to a base rate that determines the price to be charged a consumer to transfer risk to the insurer. Generally, a rating plan is embodied in a document called a rating manual.[14]

h. "Rating variables" (or "rating classes") are those explicitly stated in the insurer's rating plan and necessary to calculate the premium to be charged. Items such as loss development, trend or price elasticity would not be considered a rating variable unless these items are part of a filed rating plan. A rating variable includes consideration of tier placement within a company (but not across companies; underwriting determines the acceptability of a risk to a company) and insurance scores of all types.

i. A "rating factor" is the numerical value assigned to a rating variable for premium calculation purposes.

j. A "rating cell" is the result of any combination of rating variables in the rating plan.

k. The "rate" is defined as an estimate of all future costs associated with an individual risk transfer. A base value used as the starting point for the calculation of a premium and other rating factors that adjust the base value are considered to be rates.

l. A "risk profile" is the set of characteristics set forth in the insurer's rating plan required to calculate the premium to be charged for the purpose of transferring the individual's risk to the insurer. Two individuals with the same risk profile have the same risk, loss and expense expectations.

m. The "price" or "premium" charged a consumer incorporates management decisions after taking into account other considerations such as underwriting, marketing, competition, law and claims, in addition to the actuarial estimate of the rate. The price (or premium) charged is calculated by taking the individual's risk profile and applying the final rates and rules contained in the insurer's rating plan according to the policyholder's relevant characteristics.

n. The purpose of "capping" or "transition" rules is to provide stability to the insurer's book of business when large premium changes are possible. A premium or rate "capping" rule is a widely used practice where the change in premium from the current premium to the renewing premium (increase or decrease) is reduced. Capping impacts the premium change at renewal on a policy-by-policy basis and is usually in effect for a short period of time (e.g., the full approved premium will be charged after no more than three renewal cycles). Capping usually occurs when large policy premium changes (increases or decreases) are

13. Moffatt, M. Economics expert, Economics.about.com.
14. Paraphrased from the Casualty Actuarial Society's Foundations of Casualty Actuarial Science.

caused by significant changes to the insurer's base rates or its rating factors. Transition rules are effectively the same as capping rules, which can occur when overhauling a company's rating plan or when merging books of business from different rating plans.

IV. Price Optimization Background

15. There is no single or widely accepted definition of price optimization. In economics, optimization is "(f)inding an alternative with the most cost-effective or highest achievable performance under the given constraints, by maximizing desired factors and minimizing undesired ones."[15]

16. Definitions or descriptions of price optimization as used in insurance, offered by various stakeholders, include the following:

    a. The CAS defines price optimization as "the supplementation of traditional actuarial loss cost models to include quantitative customer demand models for use in determining customer prices. The end result is a set of proposed adjustments to the cost models by customer segment for actuarial risk classes."[16]

    b. The American Academy of Actuaries' (Academy) Price Optimization Task Force defines price optimization as "a sophisticated technique based on predictive modeling results and business objectives and constraints that are intended to assist insurance companies in setting prices. It is an additional component of the pricing process in which the business manager goes from cost-based rates to final prices by integrating expected costs with expected consumer demand behavior, subject to target business objective(s). The target business objective(s) may be to improve profit, increase volume, increase or maintain retention, or some combination thereof. These targeted business objectives represent the insurer's pricing strategy. Price optimization is a technique used to achieve that pricing strategy."[17]

    c. Towers Watson defines price optimization as "a systematic process for suggesting adjustments to theoretical cost-based prices that better achieve business objectives, subject to known constraints."[18]

    d. Earnix defines price optimization as a "systematic and statistical technique to help an insurer determine a rating plan that better fits the competitive environment, within actuarial and regulatory standards." Earnix adds that price optimization helps inform an insurer's judgment when setting rates by producing suggested competitive adjustments that balance and help the insurer achieve certain business goals, including loss ratios,

15. *www.businessdictionary.com/definition/optimization.html*.
16. Casualty Actuarial Society Committee on Ratemaking Price Optimization Working Party, 2014. "Price Optimization Overview."
17. American Academy of Actuaries, April 15, 2015, letter.
18. Towers Watson, Nov. 3, 2014. Letter to Joseph G. Murphy, accessed at *www.naic.org/documents/committees_c_d_auto_insurance_study_group_related_141103_towers_watson.pdf*.

customer retention and new business.[19] Earnix describes price optimization as an application of prescriptive analytics as opposed to predictive analytics. Prescriptive analytics use predictive models and business goals as inputs to recommend decisions to achieve the optimal results.

e. The Ohio Department of Insurance (DOI) describes price optimization as varying premiums based upon factors that are unrelated to risk of loss in order to charge each insured the highest price that the market will bear.[20]

f. The Consumer Federation of America (CFA) describes price optimization as a practice where premiums are set based on the maximum amount a consumer is willing to pay, rather than the traditionally accepted methods of calculating premiums based on projected costs, such as claims, overhead and profit.[21]

17. Many regulators have noted that price optimization is a complex process based on predictive modeling intended to assist insurance companies in setting prices. It is an additional component of the pricing process in which the insurer transitions from actuarial indicated rates to the selected rates charged individual risks.

18. According to Earnix,[22] price optimization uses a variety of applied mathematical techniques (linear, nonlinear and integer programming) in the ratemaking process to analyze more granular data.

19. There are several different types of price optimization, and price optimization can be performed at different levels of aggregation. According to Towers Watson,[23] there are three main types of optimization used in ratemaking:

a. Ratebook Optimization – using mathematical algorithms informed by cost and demand models to adjust factors in an existing structure.

b. Individual Price Optimization – a non-parametric rate engine that builds a price based on the cost and demand for the product.

c. Hybrid Optimization – create a new rate factor based on the demand model that overlays the cost-based rate algorithm.[24]

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19. Earnix. "Introduction to Price Optimization," accessed at www.naic.org/documents/committees_c_catf_related_price_optimization_docs_reffered_in_memo_to_castf.pdf.

20. Ohio DOI, Bulletin 2015-01.

21. Consumer Federation of America, 2013. Letter to state insurance commissioners.

22. Earnix Ltd. provides integrated pricing and customer analytics software that allows financial services companies to predict customer risk and demand and its impact on business performance. Its software platform allows insurance companies to harness customer data and optimize business performance across auto, home, commercial and other product lines; *www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=1745902*.

23. Towers Watson & Company manages employee benefit programs; develops attraction, retention and reward strategies; advises pension plan sponsors on investment strategies; provides strategic and financial advice to insurance and financial services companies; and offers actuarial consulting; *www.bloomberg.com/profiles/companies/TW:US-towers-watson-&-co*.

20. With ratebook optimization, the model proposes alternative selections of rating factors in the existing rating plan to achieve an insurer's business goals. These models generally determine selections at the classification level to optimize the insurer's program. According to the CAS, insurers engaging in the ratebook form of price optimization will not charge different premiums to consumers with the same risk profile. The CAS says there is no mechanism in the insurers' rating plans to charge different premiums to consumers with the same risk profile.

21. With individual price optimization, prices are determined at the individual policy level based on cost and demand. This type of price optimization is believed to be more common with retail or personal service companies in the U.S. and in insurance pricing in other countries.

22. With hybrid optimization, an additional factor is added to an insurer's existing rating plan to incorporate other aspects from a demand model such as expected retention, profitability, rate of transition from the current premium towards the proposed premium, premium volume or expense. The new rating factor would be designed to modify the existing rating plan to achieve an insurer's business goals; the rating factor may or may not be correlated with expected costs.

23. Some distinguish between "constrained" versus "unconstrained" optimization. Generally, constrained optimization refers to an insurer setting maximum and minimum limits on the model's output. For example, in price optimization, a price could be constrained by the current price and the fully loss-based indicated price. Unconstrained optimization has no such limits.

24. Vendors such as Towers Watson and Earnix have developed commercially available software for carriers that perform price optimization. The use of the software can vary from insurer to insurer, as each insurer may specify its own objectives and constraints. According to Towers Watson, its software provides: 1) an environment for a carrier to integrate its own models (e.g., loss cost models, expense assumptions and policyholder demand models) on customer data; and 2) mathematical algorithms that search the universe of rating structure parameters (i.e., relativities) to identify the set(s) that most closely meet the carrier's corporate objectives, subject to its constraints. Thus, each optimization exercise is unique to the insurer and relies on the insurer's data, assumptions, input models, targets and constraints. Some insurers develop their own price optimization software.

25. In the traditional rate-setting process, actuaries determine expected losses, expenses and profit loading; adjustments may be made to reflect business considerations such as marketing/sales, underwriting and competitive conditions. Depending on the situation, regulators may permit insurers to reflect judgment and the competitive environment in rates (e.g., to reflect differences expected in future costs that might differ from past costs or to avoid adverse selection and the resulting associated costs to the company and consumers). However, the insurer must ensure that

24. Guven, S., 2015. FCAS, MAAA, Towers Watson & Company. Presentation, Casualty Actuarial Society's RPM Seminar.

filed rates are not excessive, inadequate or unfairly discriminatory. This table provides a high-level comparison of these approaches:

	Traditional Approach	Price Optimization Approach
Rating Plan Development:	Base rate (loss cost) x adjustment factor	Base rate (loss cost) x adjustment factor
Adjustment factors (for auto insurance) are based on …	Age, gender, territory, make and model year, and many other rating variables	Age, gender, territory, make and model year, and many other rating variables
Adjustment to rates based on market, regulatory and other considerations are based on …	Qualitative assessment	Qualitative and quantitative assessments informed by analysis of risk-related and non-risk-related data
Basis for adjustments to rates is …	Insurer judgment	Automatic, systematic analysis (modeling)

26. Price optimization based on quantitative modeling has been characterized by the CFA as a new technique and a departure from traditional cost-based ratemaking. The CFA says it uses additional, and sometimes more complex, models that incorporate non-risk-related factors to quantify the effects of rate changes with the objective to improve profitability, attract new business and retain existing business, or other measures (business metrics).

27. Traditional cost-based ratemaking often includes judgment to select rate factors to achieve insurer objectives. The key difference between traditional judgment and price optimized modeling techniques is that with price optimized modeling: 1) market demand and customer behavior are quantified instead of being subjectively determined; and 2) the effect of the deviation from the cost-based rate on business metrics is mathematically measured. Both approaches can make adjustments to the indicated cost-based rating factors, but with price optimization, these adjustments are made to rating factors with more clearly quantified insurer goals, and in lieu of or in addition to adjustments to rating factors, price optimization could be used to adjust the rate or premium for an individual policy.

28. According to Towers Watson, price optimization incorporates models that generate a much larger number of rate scenarios to run through the price assessment environment and helps to better identify which scenarios best achieve business objectives.

29. Towers Watson notes that “elasticity of demand is a key ingredient” in the price optimization process. Towers Watson also notes that the input models in its optimization software include policyholder demand models, which “do not describe which customers shop more or less but rather how likely a customer is to renew a policy or accept an insurer’s quote.” Policyholder demand models, according to Towers Watson, are generally fit to recent, customer-level, historical data that

contains information about the customer, as well as what purchase decision the customer made (e.g., did the customer renew – yes/no, did she or he accept this quote – yes/no). [25]

30. Price optimization has been used for years in other industries, including retail and travel. However, the use of model-driven price optimization in the U.S. insurance industry is relatively new. A 2013 Earnix survey[26] of 73 major insurers found that 55% consider customer price elasticity. Of large insurance companies (with gross written premiums over $1 billion), 45% currently use some form of price optimization, with an additional 29% of all companies reporting they plan to do so in the future. State regulators report receipt of few rate filings specifically identifying the use of price optimization. This may be because price optimization is not clearly disclosed to regulators when a filing is made or because price optimization is used in a manner that is not directly part of a filed rating plan.

V. Identify Potential Benefits and Drawbacks of Price Optimization

31. Price optimization affects the selected rates, rating factors or premium rather than the cost-based indications. Historically, selections are often based, in part, on judgment. Therefore, regulators are challenged with reviewing an insurer's selected rates or rating factors without, in certain cases, knowing how price optimization influenced the insurer's selections. General guidelines some regulators may use to review rates include the relationship between the current, indicated and selected rates or factors, how far the selected rates or factors vary from the indications, or the relationship between factors for a rating plan variable. Distilling the voluminous information connected with price optimization makes determining the extent and effect of a program much more difficult for regulators. In addition, regulators must rely upon insurers to present accurate and complete information on indicated rates and the adjustments to arrive at selected rates. Regulators do not currently have the data necessary for an independent evaluation of most of the insurer modeling and calculations.

32. One aspect of working with generalized linear models (GLMs) and rating plans is that they can produce large changes in the risk estimate of individual policies between versions (or when introduced in a rating plan), often as the compounding of many small changes across all the rating variables. As such, companies need ways to provide rate stability when implementing a new rating plan or changes to an existing rating plan. One of the goals within constrained optimization can be to limit policyholder disruption. According to the CAS,[27] price optimization may improve rate stability and lower an insurer's long-term cost for providing coverage and limit policyholder disruption. This may be viewed as indirectly favorable for consumers who do not want to shop for insurance on a regular basis.

25. Marin, A. and T. Bayley, 2010. "Price Optimization for New Business Profit and Growth," accessed at *www.towerswatson.com/en/Insights/Newsletters/Global/Emphasis/2010/iEmphasisi-20101.*

26 Auto Insurance Pricing Practices in North America – Benchmark Survey, *http://earnix.com/auto-insurance-pricing-practices-in-north-america-3/3403/*.

27. Casualty Actuarial Society, 2014. Letter to the Casualty Actuarial and Statistical Task Force.

33. Consumer advocates assert that deviation from cost-based ratemaking through price optimization will disfavor those consumers with fewer market options, less market power and less propensity to shop around—in particular, low-income and minority consumers.[28] Based on an Insurance Information Institute (III) poll, however, lower-income customers (under $35,000 annual income) are more likely to shop for insurance than more affluent individuals (above $100,000 annual income), who might shop less.[29] However, Robert P. Hartwig, president of the III, states that the "assertion that low-income consumers are particularly vulnerable because they do not shop is … entirely unsubstantiated." A poll conducted by the III "found that 68% of people with annual income under $35,000 compared prices when most recently buying auto insurance, a higher percentage than any other income group. [61%] of respondents with income above $100,000 said they had shopped around."[30] The CFA notes that only 18% of drivers shop for auto insurance every year, and 58% rarely or never shop according to a Deloitte survey.[31] A recent study by the Insurance Research Council (IRC) reports 26% of households with incomes of $100,000 or more reported shopping for auto insurance within the 12 months prior to the survey; 25% of households with incomes between $60,000 and $99,999 reported shopping; 25% of households with incomes between $35,000 and $59,999 reported shopping; 23% of households with incomes between $20,000 and $34,999 reported shopping; and 21% of households with incomes less than $20,000 reported shopping. The IRC study notes that "among racial/ethnic groups, Hispanic respondents were least likely to have shopped (22%), while black respondents were most likely to have shopped (33%) for auto insurance."[32]

34. According to the CFA, there is no evidence that price optimization improves rate stability, lowers long-term costs or limits policyholder disruption. Price optimization is not needed to select rates less than indicated rates, as evidenced by decades of rate filings. It is unclear how an insurer's long-term cost for providing coverage is improved by price optimization when price optimization is a non-cost-based adjustment to cost-based rate indications. Cost-based regulatory standards do not permit unfair discrimination in the name of "avoiding policyholder disruption." It is important to present consumers with the true cost of insurance and the role of markets to allow consumers to address policyholder disruption by shopping around.[33]

35. Mr. Hartwig claims the price optimization process does not (unfairly) discriminate and does not abandon the core principle of risk-based pricing. He said it simply provides "more precision in the

28. Comments of the Consumer Federation of America; Center for Economic Justice; Americans for Insurance Reform; United Policyholders; Center for Insurance Research; and Peter Kochenburger, NAIC Consumer Representative; on the March 24, 2015, Draft Casualty Actuarial and Statistical (C) Task Force Price Optimization White Paper, April 20, 2015.

29. Scism, L., 2015. "N.Y. Regulator Studying How Car, Other Insurance Rates Are Set," *Wall Street Journal*, accessed at *www.wsj.com/articles/n-y-regulator-studying-how-car-other-insurance-rates-are-set-1426793439?tesla=y*.

30. Scism, L., Feb. 20, 2015. "Loyalty to Your Car Insurer May Cost You," accessed at *http://blogs.wsj.com/moneybeat/2015/02/20/loyalty-to-your-car-insurer-may-cost-you/*.

31. "The Voice of the Personal Lines Consumer" a survey by Deloitte released in 2012.

32. Insurance Research Council, "Shopping for Auto Insurance and the Use of Internet-Based Technology," June 2015.

33. Comments on the Casualty Actuarial and Statistical (C) Task Force's Draft Price Optimization White Paper, *Consumer Federation of America and Center for Economic Justice*, not dated but received by the Task Force and posted as discussion material for the Task Force's July 21, 2015, conference call.

process associated with pricing, and it allows insurers in an analytical way to deal with what-if scenarios."[34]

36. State insurance regulators are concerned with the shift from "loss-based ratemaking principles to principles that encompass subjective market driven ratemaking"[35] and question how price optimization "would not conflict with state rating laws that require rates not to be excessive, inadequate and unfairly discriminatory."[36]

37. Insurers argue price optimization is a technological improvement over current practices, and criticisms are aimed at individual price optimization—not the ratebook form of price optimization used in setting rates.

38. Some insurers contend that price optimization is allowed under the current Actuarial Standards of Practice.

VI. Regulatory Responses to Price Optimized Rating Schemes

39. State law requires that rates not be excessive, inadequate or unfairly discriminatory. Regulators should consider whether these requirements can be met when price optimized rating schemes are used. Even if the requirements can be met, some constraints on the optimization might be needed.

40. Regulators have a number of potential responses regarding price optimization. Numerous states defined price optimization and issued bulletins prohibiting the defined practice. New York issued letters to insurers to further study price optimization. References to and some descriptions of bulletins are provided in the attached Appendix A.

41. Some state regulators believe that existing state laws are sufficient to deal with price optimization and that no bulletin or other public statement is necessary. Many states have not received a filing that stated price optimization was incorporated into the rating process. Many states are looking more closely at the issue or are waiting for the issue to be more thoroughly discussed and reported upon by the NAIC.

42. Regulators have broad authority to ensure rating practices are consistent with state rating laws. The Task Force identified the following options for regulatory responses to price optimized rating schemes:

    a. Determine which price optimization practices, if any, are allowed in a particular state.

34. Weisbaum, H., 2014. "Data Mining Is Now Used to Set Insurance Rates; Critics Cry Foul," accessed at www.cnbc.com/id/101586404.

35. Piazza, Richard, Casualty Actuarial and Statistical (C) Task Force letter to Gary R. Josephson, CAS President, regarding the CAS "Discussion Draft of Statement of Principles Regarding Property and Casualty Insurance Ratemaking," May 22, 2013.

36. Ibid.

b. Define any constraints on the price optimization process and outcomes.
    i. A constraint might limit the pricing adjustment to be between the current rate and the actuarial indicated rate and always move in the direction of the actuarial indicated rate.
    ii. A constraint might require selected rating factors to be between the current and actuarial indicated factors, within a confidence interval around the current/indicated factors, or directionally consistent with the current factors.
    iii. A constraint might limit the variables that can be used in defining a risk class, such as a categorical or numerical measure of retention.
    iv. A constraint might be that price optimization can only be applied to specific class sizes, not class sizes so small that price optimization could be applied at the individual insured level or to small groups of insureds.
    v. A constraint could be that price optimization adjustment to rating factors must produce rates that maintain cost-based differences.

c. Develop regulatory guidance on the meaning of statutory rate requirements so that rates are not excessive, inadequate or unfairly discriminatory.
    i. Provide clear examples of what is unacceptable.
    ii. Identify principles under which the legal requirements for rates are met.

d. Enhance filing requirements using a specific definition of "actuarial indication" of needed rates and rating factors.
    i. Consider whether the actuarial indication is a point estimate or any selected value within a confidence interval around the point estimate.
    ii. Consider whether to require actuarial certification that the indications presented in the rate filing are based solely on cost considerations and are not otherwise adjusted.
    iii. Consider requiring disclosure of any adjustments to rates that are not based on expected cost.
    iv. Consider not allowing any non-cost-based adjustments to selected rates or rating factors.

e. Require specific explanation or reasoning to support any proposed or selected rate that deviates from the actuarially indicated rate.

f. Change filing requirements to require the following transparency, with consideration of state law regarding confidentiality:
    i. Disclosure of whether price optimization, including any customer demand considerations, is used.
    ii. Disclosure of differences in proposed prices for the insurer's existing and new customers with the same risk profile.

iii. Filing of a report showing the distribution of expected loss ratios under the current prices and under the proposed prices (e.g., a histogram with two series). If the distribution under proposed prices is wider compared to the distribution under current rates, then there could be additional subsidies in the proposed rates. Note that this could be affected by changes in an insurer's mix of business, etc.

iv. Disclosure of all data sources, models and risk classifications used by an insurer to calculate a premium, whether referred to as underwriting, tier placement, rating factors, discounts, surcharges or any other term.

v. Disclosure of which rating factor or factors are affected by price optimization, the size of the impact by rating factor and the cumulative impact of price optimization across all rating factors for existing policyholders and applicants for insurance.

vi. Filing of a certification by an actuary that all non-cost-based considerations affecting the proposed rates and rating factors are documented in the filing. The certification would also identify the exhibits where differences are shown. A more precise definition of price optimization may be needed.

g. Ensure that the regulatory system does the following:

i. Requires all rating factors be filed and all adjustments to indicated rates be disclosed.

ii. Maintains adequate resources for reviewing complex rate filings, including price optimization.

iii. Establishes regulatory practice with more in-depth review of price optimization models used in ratemaking.

1. States and/or the NAIC should obtain expertise with models.
2. Modeling experts should review how a particular model works and the accuracy and appropriateness of input data in order to make an informed determination regarding the statutory rate requirements.

VII. Recommendations for Regulators

43. This white paper is focused on price optimization in personal lines and its impact on rates. The previous paragraphs provide the Task Force's background research and study of price optimization. Utilizing this study, the Task Force makes the following recommendations regarding rates and regulatory rate review for personal lines insurance.

44. The Task Force recognizes there are numerous definitions of price optimization. Companies can use the term to encompass activities that might include retention models, elasticity of demand, maximization of profit, competitive analysis, etc. The Task Force agreed not to recommend a definition of price optimization but rather, under any definition of price optimization, recommend

that the states address the requirement in their state rating laws that "rates shall not be excessive, inadequate, or unfairly discriminatory."

45. The Task Force recommends that rating plans should be derived from sound actuarial analysis and be cost-based. The proposed rates developed from an actuarial analysis need to comply with state laws. They should also be consistent with the actuarial principles derived from a professional actuarial body and the actuarial standards of practice established by the Actuarial Standards Board (ASB).

46. The Task Force recommends that two insurance customers having the same risk profile should be charged the same premium for the same coverage. Some temporary deviations in premiums might exist between new and renewal customers with the same risk profile because of capping or premium transition rules.

47. The Task Force acknowledges that not all rates and rating plans that are accepted or approved strictly adhere to the actuarial indications. While actuarial indications are largely preferred over pure judgment, regulators acknowledge that the actuarial indications are only an estimate of the cost to transfer risk and that some insurer judgment will inevitably enter the rate setting process. The Task Force recommends states allow flexibility reflecting insurance loss and expense costs in the selection of rating factors. Some additional recommendations regarding the acceptance of deviations from the actuarial indications are as follows:

    a. The Task Force recommends the selection of a proposed rate between the currently approved rate and the actuarially indicated rate be allowed if based on reasonable considerations adhering to state law and consistent with actuarial principles and Standards of Practice reflecting expected insurance loss and expense costs.

    b. The Task Force recommends that a selected rate outside the range defined by the current and indicated rate may be acceptable provided it is disclosed, complies with state law and is shown to be consistent with actuarial ratemaking principles and Standards of Practice.

    c. The Task Force acknowledges that capping and transitional rules can be in the public's best interest but recommends regulators consider the extent to which they will allow capping and transitional rating. Consideration should be given to the length of time over which premium changes will be limited before they reach the approved rate level, the size and reasonableness of capping's upper and lower bounds, and the extent to which capping of one rate might affect rates charged to others.

48. The Task Force recommends that under the requirement "rates shall not be … unfairly discriminatory," insurance rating practices that adjust the current or actuarially indicated rates or the premiums, whether included or not included in the insurer's rating plan, should not be allowed

when the practice cannot be shown to be cost-based or comply with the state's rating law. With due consideration as to whether practices are cost-based or in compliance with state rating law, the Task Force believes the following practices , at a minimum, are inconsistent with statutory requirements that "rates shall not be … unfairly discriminatory:"

a. Price elasticity of demand.
b. Propensity to shop for insurance.
c. Retention adjustment at an individual level.
d. A policyholder's propensity to ask questions or file complaints.

49. The Task Force recommends that rating plans in which insureds are grouped into homogeneous rating classes should not be so granular that resulting rating classes have little actuarial or statistical reliability. The use of sophisticated data analysis to develop finely tuned methodologies with a multiplicity of possible rating cells is not, in and of itself, a violation of rating laws as long as the rating classes and rating factors are cost-based.

VIII. State Considerations

50. With due consideration of the above recommendations, the Task Force proposes the following:

a. Consider issuing a bulletin to address insurers' use of methods that may result in non-cost based rates. (See Appendix B.)

b. Consider enhancing requirements for personal lines rate filings to improve disclosure and transparency around rates, rate indications and rate selections. (See Appendix C.)

c. Analyze models used by insurers in ratemaking to ensure the model adheres to state law and actuarial principles. A list of possible questions is provided to assist the regulatory analysis. (See Appendix D.)

Adopted by the Casualty Actuarial and Statistical (C) Task Force, Nov. 19, 2015.
Adopted by the Property and Casualty Insurance (C) Committee, Nov. 21, 2015.
Adopted by the Executive (EX) Committee and Plenary, April 6, 2016.

Appendix A

State Actions Taken Prior to Adoption of the White Paper

1. Maryland, the first state to take explicit action against price optimization in rate setting, released Bulletin B 14-23 on Oct. 31, 2014.[37] The Maryland Insurance Administration announced it determined that price optimization is a practice in which an insurer varies rates based on factors other than the risk of loss, such as the willingness of some policyholders to pay higher premiums than other policyholders, resulting in rates that are unfairly discriminatory in violation of state law. Insurers using price optimization techniques in Maryland were required to end such practices and resubmit rates compliant with the bulletin no later than Jan. 1, 2015.

2. In February 2015, the Ohio DOI issued Bulletin 2015-01, noting that "price optimization involves gathering and analyzing data related to numerous characteristics specific to a particular policyholder that are unrelated to risk of loss or expense."[38] The bulletin says that insurer usage of the price elasticity of demand, or how much of a premium increase a particular policyholder will tolerate before switching insurers, is unrelated to risk of loss or expense. The Ohio DOI said that by its nature, price optimization can result in two insureds with similar risk profiles being charged different premiums. Insurance companies that use these price optimization techniques in Ohio were required to end the practice and resubmit rates compliant with the bulletin no later than June 30, 2015.

3. The California DOI issued a "Notice Regarding Unfair Discrimination in Rating Price Optimization" on Feb. 18, 2015, and generally defined price optimization as setting rates based on a willingness of an individual or group to pay more than another individual or group.[39] The Notice states that any insurer currently using price optimization to adjust rates in California must cease doing so. "Any insurer that has employed price optimization to adjust its rates in the ratemaking/pricing process shall remove the effect of any such adjustments from any filing to be submitted subsequent to the date of the Notice. And any insurer that has a factor or factors based on price optimization in its rating plan shall remove the factor or factors in its next filing."

4. On March 18, 2015, the New York Department of Financial Services (NYDFS) sent a letter to P/C insurers and defined price optimization as the practice of varying rates based on factors other than those directly related to risk of loss—for example, setting rates or factors based on an insured's likelihood to renew a policy or on an individual's or class of individuals' perceived willingness to pay a higher premium relative to other individuals or classes. The NYDFS declared such practices as inconsistent with traditional cost-based rating approaches and said such practices could violate its law prohibiting rates to be unfairly discriminatory. The NYDFS is seeking to determine whether

37. *http://insurance.maryland.gov/Insurer/Documents/bulletins/bulletin-14-23-unfair-discrimination-in-rating.pdf.*
38. *https://insurance.ohio.gov/Legal/Bulletins/Documents/2015-01.pdf.*
39. *www.insurance.ca.gov/0250-insurers/0300-insurers/0200-bulletins/bulletin-notices-commiss-opinion/upload/PriceOptimization.pdf.*

insurers use price optimization in New York and has required insurers to answer its specific rating questions by April 15, 2015.[40]

5. The Florida Office of Insurance Regulation Informational Memorandum OIR-15-04M was issued May 14, 2015.[41] Rates within a risk classification system would be considered fair if differences in rates reflect material differences in expected cost for risk characteristics. Price optimization involves analysis and incorporation of data not related to expected cost for risk characteristics—that is, it involves factors not related to expected loss and expense experience. The memorandum states the use of price optimization results in rates that are unfairly discriminatory and in violation of Sections 627.062 and 627.0651, Florida Statutes. Insurers that have used price optimization in the determination of the rates filed and currently in effect should submit a filing to eliminate that use. Insurers should ensure that any filings subsequent to the date of the Memorandum do not utilize price optimization in any manner.

6. The Vermont Department of Financial Regulation, Division of Insurance, issued Insurance Bulletin No. 186 titled Price Optimization in Personal Lines Ratemaking on June 24, 2015.[42] The bulletin is applicable to all personal lines policies. Price optimization, in some of its application, involves the judgmental use of factors not specifically related to a policyholder's risk profile to adjust the policyholder's insurance premium. Unfair discrimination is considered to exist if price differentials "fail to reflect equitably the differences in expected losses and expenses"[43] for different classes of policyholders. The bulletin states that Vermont law is clear and that both base rates and rating classes must be based on factors specifically related to an insurer's expected losses and expenses. Insurers are directed that all personal lines rate filings must disclose whether the company uses non-risk-related factors to help determine the insured's final premium.

7. Washington's Technical Assistance Advisory 2015-01 was issued July 9, 2015, by the state of Washington, Office of the Insurance Commissioner, on the subject of price optimization.[44] The advisory states Washington law requires that premium rates for insurance not be excessive, inadequate or unfairly discriminatory. A rate is not unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer. Thus, rates must be based on cost associated with risk. Charging higher rates to certain consumers based on their willingness to look elsewhere for insurance does not reflect a genuine increased cost incurred by the insurer. To the extent that an insurer's use of price optimization results in premiums, rates or rating factors unrelated to cost and risk, it will be considered unfairly discriminatory and in violation of Washington law.

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40. *Insurance Journal*, 2015. "New York DFS Opens Inquiry Into Price Optimization," accessed at www.insurancejournal.com/news/east/2015/03/20/361413.htm.
41. www.floir.com/siteDocuments/OIR-15-04M.pdf.
42. www.dfr.vermont.gov/reg-bul-ord/price-optimization-personal-lines-ratemaking.
43. Chapter 128 of Title 8 V.S.A.
44. www.insurance.wa.gov/about-oic/newsroom/news/2015/documents/TAA-PO-July2015.pdf.

8. The following additional states and district issued bulletins or communicated policies on price optimization:

    a. Virginia, July 2015[45]
    b. Indiana, July 20, 2015[46]
    c. Pennsylvania, Aug. 22, 2015[47]
    d. Maine, Aug. 24, 2015[48]
    e. District of Columbia, Aug. 25, 2015[49]
    f. Montana, Sept. 12, 2015[50]
    g. Rhode Island, Sept. 18, 2015[51]
    h. Delaware, Oct. 1, 2015[52]
    i. Minnesota, Nov. 16, 2015[53]

45. https://www.scc.virginia.gov/boi/co/pc/files/pc_handbook.pdf.
46. www.in.gov/idoi/files/Bulletin_219.pdf.
47. www.pabulletin.com/secure/data/vol45/45-34/1559.html.
48. www.maine.gov/pfr/insurance/bulletins/pdf/405.pdf.
49. http://disb.dc.gov/node/1107816.
50. http://csimt.gov/wp-content/uploads/PriceOptMemo_091215.pdf.
51. www.dbr.state.ri.us/documents/news/insurance/InsuranceBulletin2015-8.pdf.
52. http://delawareinsurance.gov/departments/documents/bulletins/domestic-foreign-insurers-bulletin-no78.pdf?updated.
53. http://mn.gov/commerce-stat/pdfs/insurance-bulletin-price-optimization.pdf.

Appendix B

Potential State Bulletin

INSURANCE BULLETIN XXX DATE

PRICE OPTIMIZATION
In Personal Lines Ratemaking

This bulletin is applicable to all property and casualty insurers issuing personal lines policies in [STATE].

While there is no universally accepted definition of price optimization, the practice, in some of its applications, involves the use of factors not specifically related to an insured's expected losses and expenses but are used to help determine or to adjust an insured's premium. An example would be using an individual policyholder's response to previous premium increases to determine how much of a premium increase the policyholder will tolerate at renewal before switching to a different insurer. This practice can result in two policyholders receiving different premium increases even though they have the same loss history and risk profile. It can also result in premiums that are excessive or inadequate.

Property and casualty insurers doing business in [STATE] are reminded that all ratemaking must conform to the statutory requirements contained in [STATUTE(S)]. Rates must not be "… excessive, inadequate or unfairly discriminatory …" A rate will be considered unfairly discriminatory if price differentials fail to reflect equitably the differences in expected losses and expenses for different classes of policyholders. Both base rates and rating classes must be based on policyholder characteristics specifically related to an insurer's expected losses, expenses or policyholders' risk. While insurers may employ actuarial judgment in setting their rates, judgmental adjustments to a rate may not be based on non-risk-related policyholder characteristics such as an individual's "price elasticity of demand," which seek to predict how much of a price increase an individual policyholder will tolerate before switching to a different insurer.

The following practices are inconsistent with statutory requirements that "rates not be … unfairly discriminatory":

a. Price elasticity of demand.
b. Propensity to shop for insurance.
c. Retention adjustment at an individual level.
d. A policyholder's propensity to ask questions or file complaints.

The Department of Insurance (DOI) does not intend this bulletin to prohibit or restrict such practices as capping or transitional pricing when applied on a group basis. Insurers should group individual policyholders into justifiable, supportable, risk-based classifications and treat similarly situated policyholders the same with respect to insurance pricing. Likewise, the use of sophisticated data analysis to develop finely tuned methodologies with a multiplicity of possible rating cells is not, in and of itself, necessarily a violation of rating laws as long as the classifications are based strictly on expected losses, expenses or other justifiable, supportable risk characteristics.

[Drafting note: States will need to consider whether the bulletin should also apply to commercial lines policies and adjust the bulletin accordingly.]

Appendix C

Potential Requirements for Rate Filings

1. The insurer should disclose the current, risk-based indicated (see #2 for definition) and the selected rating factor, rate or premium adjustments.

2. The risk-based indicated charge should be actuarially justified as the measurement of the cost to transfer risk from the insured to the insurer. Actuarial judgment [see 14.b for definition) to evaluate that transfer cost can be included.

3. The insurer must adequately explain any deviation from the actuarial indication to the selected change for each rating characteristic.

4. The insurer should disclose and adequately explain any capping rule and the plan to transition toward the indicated charge over time. Beyond the overall effect of capping or transition rules, the insurer should disclose and justify, in detail, any differences between new business and existing business pricing.

5. The insurer should disclose all data, sources and models used in ratemaking. In particular, the insurer should disclose use of customer elasticity of demand or demand models in the selection of rates. The insurer should disclose constraints used in the selection of rates. States should consider the proprietary nature of such information and grant confidentiality as appropriate and allowed under state law.

6. For any deviations around the actuarial indication, insurers should evaluate credibility of the actuarial indication and make appropriate actuarial assumptions. When rating classes are so granular that there is limited credibility, regulators should consider whether to allow such a rating plan.

7. Some states might decide to require an attestation of the proposed rates in a rate filing. Potential attestation could include:
    a. Attestation that proposed rates are within a reasonable range of cost-based indications.
    b. Attestation that actuarial indications are cost-based, which would inform regulators that any deviations from actuarial indications should be evaluated according to the law.
    c. Attestation that actuarial indications are based on a sound actuarial methodology.

8. The insurer should provide a disruption report that shows the distribution of proposed policyholder premium changes (percentage change) when the existing book of business is renewed under the proposed rating plan.

Note: States should consider the proprietary nature of each requirement and grant confidentiality as appropriate and if allowed under state law.

Appendix D

Potential Questions for Regulators to Ask
Regarding the
Use of Models in P/C Rate Filings

Insurers might use a model in the development of proposed rates and rating factors. The Task Force offers some potential questions a regulator could ask regarding the use of models in rate proposals. Questions may include, but not be limited by, the following:

Model Description

1. Please provide a high-level description of the workings of the model that was used to select rates and rating factors that differ from the indicated.
2. What is the purpose of the model? What does the model seek to maximize or minimize (e.g., underwriting profit, retention, other) and explain.
3. Under what specific constraints is any maximization/minimization performed? Identify each constrained variable and its minimum and maximum values.

Model Variables

4. How were the input variables for your model selected?
    a. What is the support for the model variables, including the predictive values and error statistics for the model variables?
    b. Are the parameters loss-related, expense-related or related to the risk in some other way?
5. Which of the input variables are internal (customer-provided or deduced from customer-provided information) or external?
    a. Identify whether each input variable is used in your rating plan.
    b. For each external variable, please identify:
        i. The owner or vendor of the data (e.g., Department of Motor Vehicles).
        ii. Which variables are subject to the requirements of the federal Fair Credit Reporting Act.
        iii. How you ensure that the data are complete and accurate.
        iv. The framework, if any, that provides consumers a means of correcting errors in the data pertaining to them.

Model Constraints and Output

6. What level of granularity is your model output (e.g., the class plan level, individual rating factors, or some other level such as household or demographic segment that is different from the rating plan)?
7. What are the limits (or constraints) for the selected rating plan factors, if any?
8. How do the modeled values compare to the company experience?

Note: Regulators should evaluate the particular filing and associated costs to insurers to determine the extent of questioning needed. Regulators should also consider the potential proprietary nature of modeling information and grant confidentiality as appropriate and if allowed under state law.

Financial Reporting Through the Lens of a Property/Casualty Actuary

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EY

FOREWORD

EY was originally retained by the Casualty Actuarial Society (CAS) to write a text on financial reporting and taxation as it affects reserving and statutory reporting for use in the CAS basic education process. The CAS had two key objectives for this text:

1. Replace a number of readings that existed on the CAS Syllabus of Basic Education as of 2011 with a single educational publication.
2. Refine the content of the syllabus material to focus on financial accounting and taxation topics that are of particular relevance to the property/casualty actuary.

The CAS specified that the text would focus on the learning objectives contained within the syllabus as of 2011.

This publication has been prepared from an actuary's lens, highlighting those areas of financial reporting and taxation deemed to be relevant by the CAS Syllabus Committee and the authors of this text. The learning objectives contained within the 2011 syllabus provided the underlying direction of the content contained herein. Further, the core content was originally developed based on the NAIC Annual Statement Instructions in 2011.

Subsequently, EY was requested to update the original textbook to:

- Add specific examples to illustrate differences between SAP and GAAP
- Include tax implications of investment strategies
- Reflect the new tax law enacted in the U.S. in December 2017
- Bring IFRS and Solvency II current (to 2018) and include discussion of the NAIC's Own Risk and Solvency Assessment (ORSA)
- Bring Schedule F current (to 2018)
- Provide discussion as to why companies use intercompany pooling arrangements and their impact on surplus
- Reflect any resolution of discrepancies between the NAIC's written and electronic instructions for risk-based capital (RBC) regarding Asset Risk associated with insurance company subsidiaries
- Bring the Canadian chapter current (to 2018)
- Reflect comments and questions received by the CAS from candidates and others, as well as errata previously submitted

This version of the text reflects the above specified changes. In doing so, we have updated the Annual Statement for Fictitious Insurance Company to 2018. No other changes have been incorporated, other than minor typographical edits. Further, we have not accounted for any changes to the Exam 6 Syllabus, other than those resulting in the above requested updates from the CAS. The Exam 6 learning objectives and examination material may have changed

and may continue to change in the future. Therefore, the content of this publication may need to be updated in the future.

This text does not represent the position of EY or the authors with respect to interpretations of accounting or tax guidance. Nor is this text intended to be a substitute for authoritative accounting or insurance regulatory and related guidance issued by the National Association of Insurance Commissioners (NAIC), American Institute of Certified Public Accountants (AICPA), Financial Accounting Standards Board (FASB), Governmental Accounting Standards Board (GASB), Securities and Exchange Commission (SEC), Internal Revenue Service (IRS), Chartered Professional Accountants Canada (CPA Canada)[1], International Federation of Accountants (IFAC), Global Accounting Alliance (GAA), International Financial Reporting Standards Foundation (IFRS)/International Accounting Standards Board (IASB), or any other regulatory body. Authoritative guidance from regulatory bodies trumps the writings contained herein. Furthermore, accounting standards are continuously evolving. As a result, readers of this text should be aware that the accounting standards referenced in this publication may have changed since the time of writing. The CAS may request that this publication be updated to reflect such changes.

While the authors of this publication have taken reasonable measures to verify references, content and calculations, it is possible that we may have inadvertently missed something. We would appreciate being informed of any inaccuracies so that an errata sheet(s) may be issued, and/or future editions of this publication may be corrected.

This publication has been prepared for general informational purposes only, and is not intended to be relied upon as accounting, tax or other professional advice. It is not intended to be a substitute for detailed research or the exercise of professional judgement. Neither Ernst & Young LLP nor any other member of the global Ernst & Young organization can accept any responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this publication. Please refer to your advisors for specific advice.

[1] In October 2014, the Certified General Accountants Association of Canada (CGA-Canada) joined Chartered Professional Accountants of Canada (CPA Canada) to complete the integration of the country's national accounting bodies. CPA Canada was established the previous year by the Canadian Institute of Chartered Accountants (CICA) and The Society of Management Accountants of Canada (CMA Canada).

ACKNOWLEDGEMENTS

The authors of this publication would like to thank the CAS Syllabus Committee for its review of this publication and feedback provided. Special thanks goes to Sarah McNair-Grove, Laura Cali, George Levine, Michel Trudeau, Miriam Fisk, Brandon Basken, Stephane McGee, Sarah Chevalier and Mei-Hsuan Chao who reviewed the various drafts. We would also like to thank Wendy Germani who spent countless hours creating and editing the 2011 Annual Statement excerpts for Fictitious Insurance Company. The amount of personal time spent by these individuals demonstrates their tremendous dedication to the actuarial profession.

The authors would also like to acknowledge those individuals within EY who assisted us by creating certain content, tables and exhibits and performing editorial reviews. These individuals include Dave Osborn, Kishen Patel, and Yan Ren. Particular credit goes to David Payne, who rewrote Chapter 19. Risk-Based Capital, Ian Sterling and Mike McComis, who contributed to Part VI. Differences from Statutory to other Financial/Regulatory Reporting Frameworks in the U.S., and Liam McFarlane and Shams Munir, who contributed to Part VII. Canadian-Specific Reporting.

Finally, the authors of this text would like to express their deep gratitude to the actuarial professionals who have invested their time writing publications for the CAS examination process. Although this publication will serve as a consolidation of many of the papers formerly on the Exam 6 Syllabus, we acknowledge the significant contributions that those papers have made in advancing the actuarial profession, as well as the knowledge of the authors of the text.

In preparing Financial Reporting through the Lens of a Property/Casualty Actuary, we relied extensively on the following publications and resources:

PUBLICATIONS

2018 Insurance Expense Exhibit.

American Academy of Actuaries Committee on Property and Liability Financial Reporting, Statements of Actuarial Opinion on P&C Loss Reserves, Washington, DC: American Academy of Actuaries, December 2018.

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Canadian Institute of Actuaries, “Educational Note: Premium Liabilities”, http://www.cia-ica.ca/docs/default-source/2016/216076e.pdf.

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National Association of Insurance Commissioners, Property and Casualty Risk-Based Capital Forecasting and Instructions, 2018.

Steeneck, Lee R., “Commutation of Claims," CAS Exam Study Note, Arlington, VA: Casualty Actuarial Society, 1998, pp. 1-26, http://www.casact.org/library/studynotes/steeneck6.pdf.

Troxel, Terrie T., and George E. Bouchie, Property-Liability Insurance Accounting and Finance. 3rd ed. Malvern, PA: American Institute for Property and Liability Underwriters, 1990.

RESOURCES

Actuarial Standards Board, Canada, http://www.actuaries.ca/ASB/index.cfm.

Website of Office of the Superintendent of Financial Institutions, http://www.osfi-bsif.gc.ca/

- MCT effective January 1, 2018
- The Canadian Annual Statement Blank – P&C

Website of Chartered Professional Accountants Canada (CPA Canada), https://www.cpacanada.ca/.

Canadian Institute of Actuaries, http://www.actuaries.ca/

- Dynamic Capital Adequacy Testing, Educational Note, November 2017
- Draft Educational Note – Financial Condition Testing, December 2019

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PART I. INTRODUCTION

CHAPTER 1. FINANCIAL REPORTING IN THE PROPERTY/CASUALTY INSURANCE INDUSTRY

IMPORTANCE AND OBJECTIVES OF FINANCIAL REPORTING

Financial reporting serves as a means to communicate a company's financial results and health. Financial reporting is accomplished through a series of financial statements that consolidate a company's transactions and events into a summarized form under specified accounting rules. The purpose of these rules is to provide companies with a framework for measuring and recording transactions and the related revenue, expenses, assets and liabilities on a consistent basis.

Financial reports enable stakeholders and regulators to track financial performance, compare a company's performance to others and make informed financial decisions under a set of common rules. The stakeholders of an insurance company include policyholders, claimants, investors, directors of the board and company management. The regulators primarily include state governmental authorities, as we shall see below.

OVERVIEW OF THE BASES OF FINANCIAL REPORTING (STATUTORY, GAAP, IFRS, TAX, CANADIAN) AND DIFFERENCES IN TERMS OF USE

The accounting standards that govern financial reporting for insurance companies are numerous and complex. As we write this publication these standards are evolving, and this evolution is resulting in much debate among industry participants. Regardless, the intent of accounting standards is to promote a consistent framework for reporting insurance company transactions such that comparisons of financial performance and health of insurance companies can be made within the industry.

In the U.S., insurance companies are regulated by the individual state governments within which they are licensed to transact business. Within each state government there is an insurance division led by an insurance commissioner, director, superintendent or administrator (commissioner). The National Association of Insurance Commissioners (NAIC) serves as an organization of state regulators that facilitates and coordinates governance across the U.S. The NAIC itself is not a regulator; regulatory authority remains with the individual states. Therefore, model laws and regulations established by the NAIC are not law; individual states have the authority to decide whether to adopt NAIC model laws and regulations.

Statutory Accounting Principles (SAP) is a framework of "accounting principles or practices prescribed or permitted by an insurer's domiciliary state."[2] Most insurance companies are licensed to transact business in more than one state. Having to follow the accounting rules and regulations of each state in which the company is licensed can be cumbersome and result in inconsistent reporting practices. To minimize the varying complexities of different rules and facilitate commonality in reporting practices, the NAIC adopted Codification of SAP effective January 1, 2001. Codification does not prevent individual state regulation but rather provides a common set of principles that individual states can follow to ease the regulatory burden on companies and promote consistency.

Statements of Statutory Accounting Principles (SSAPs) are published by the NAIC in its Accounting Practices and Procedures Manual. The manual includes more than 100 SSAPs and references related statutory interpretations, NAIC model laws and actuarial guidelines which collectively serve as the basis for preparing and issuing statutory financial statements for insurance companies in the U.S. in accordance with, or in the absence of, specific statutes or regulations promulgated by individual states.

From a financial reporting perspective, regulatory oversight by state governments focuses on insurance company solvency to ensure that policyholders receive the protection they are entitled to and claimants receive the applicable compensation for damages incurred. SAP and associated monitoring tools are intended to provide regulators with early warning of deterioration in an insurance company's financial condition. SAP tends to be conservative in order to provide that early warning. For example, certain illiquid assets are not admitted (excluded from the balance sheet) under SAP, despite having economic value.

Generally Accepted Accounting Principles (GAAP) provides another set of common rules under which publicly traded insurance companies and privately held companies report their financial transactions and operating results. GAAP does have certain specialized rules for insurance companies, but unlike SAP, this framework is not built on the principle of conservatism. Rather, the primary focus of GAAP is the presentation of a company's financial results in a manner that more closely aligns with the company's financial performance during the period. Historically, this has been accomplished by matching revenues and expenses. For example, under GAAP, expenses incurred by an insurance company in conjunction with successful acquisition of business are deferred to match the earning of associated premium. In contrast, under SAP, all costs associated with policy acquisition are expensed at the time they are incurred by the insurance company.

The Securities and Exchange Commission (SEC) is the authoritative body for establishing accounting and reporting standards for publicly traded companies in the U.S., including publicly traded insurance or insurance holding companies. As highlighted on the SEC's website, "The mission of the U.S. Securities and Exchange Commission is to protect investors,

[2] Preamble to the NAIC Accounting Practices and Procedures Manual, March 2019 version.

maintain fair, orderly and efficient markets, and facilitate capital formation."[3] The SEC has designated the Financial Accounting Standards Board (FASB) with the responsibility of developing and establishing GAAP, with the SEC operating in an overall monitoring role. The FASB is the private organization providing authoritative accounting guidance for nongovernmental entities.

The Governmental Accounting Standards Board (GASB) is the private organization providing authoritative accounting guidance for the public sector. According to the GASB's website, the GASB "is the independent organization that establishes and improves standards of accounting and financial reporting for U.S. state and local governments … the official source of generally accepted accounting principles (GAAP) for state and local governments."[4] Although this publication does not discuss accounting for governmental entities, we note that the accounting for such entities differs from the accounting for insurance companies. Knowledge of the GASB as it relates to insurance-related activities of governmental entities is important for the property/casualty actuary who performs actuarial services for the public sector.

The Internal Revenue Service (IRS) is the U.S. government agency responsible for enforcing tax laws and collecting taxes. Every business paying taxes in the U.S. must compute taxable income based on the tax laws passed by Congress and the related regulations issued by the IRS. For insurance companies, the starting point for taxable income is income determined under SAP. SAP income is adjusted based on the provisions of the various tax laws and regulations. While SAP is generally conservative, tax-basis accounting may be more or less conservative depending on how political and other factors affect tax legislation. While some adjustments result in a decrease to taxable income (e.g., tax-exempt income), adjustments specific to the insurance industry tend to focus on the acceleration of income for tax purposes (e.g., the discounting of loss reserves and the reduction of unearned premiums).

The Canadian Institute of Chartered Accountants is the body in Canada that defines Canadian Generally Accepted Accounting Principles (CGAAP). At one time, SAP applied to the preparation of the Annual Return for Canadian-domiciled insurers. However, this is no longer the case, and the financial statements included in the Annual Return are prepared in accordance with CGAAP.

Under CGAAP, policy liabilities can be recorded in accordance with accepted actuarial practice in Canada, which means that the recorded liabilities are discounted to reflect the time value of money and include a provision for adverse deviation.

[3] U.S. SEC, The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation, http://www.sec.gov/about/whatwedo.shtml, March 30, 2020.
[4] GASB, Facts About GASB, http://www.gasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175824006278&blobheader=application%2Fpdf, 2012.

Part I. Introduction

International Financial Reporting Standards (IFRS) provide an accounting framework used by many countries outside the U.S. IFRS are established by the International Accounting Standards Board (IASB).

IFRS already affects companies in the U.S. that currently have international subsidiaries or are subsidiaries of IFRS filers. At the time of the writing of this publication, IFRS 4, which pertains to the recognition and measurement of insurance contracts, permits insurance companies to report under the current accounting rules of their local country with slight modifications. An example of one such modification is requiring companies to establish premium deficiency reserves, as needed, regardless of local requirements. Given the current lack of a detailed measurement model under IFRS for insurance contracts, one of the key initiatives of the IASB is the development of a new accounting standard for insurance contracts. We will discuss the standard developed by the IASB (and the FASB developments in this area) and how it differs from the measurement of insurance liabilities today.

CHAPTER 2. RELEVANCE OF FINANCIAL REPORTING TO THE ACTUARY

IMPORTANCE AND OBJECTIVES OF FINANCIAL REPORTING

Actuaries estimate the financial impact of insurable events. As such, actuaries need to understand the accounting rules under which the financial impact is being reported. Consider the actuary providing an estimate of an insurance company's unpaid claims for purposes of comparison to recorded loss reserves on the company's balance sheet. If the balance sheet is prepared under Statutory Accounting Principles (SAP), then the loss reserves are recorded on a net of reinsurance basis. If the company's financial statements are prepared under Generally Accepted Accounting Principles (GAAP), then the loss reserves are recorded gross of reinsurance. For comparison purposes, the actuarial estimate of unpaid claims would need to be prepared on a net basis for SAP and gross basis for GAAP. The actuary might also provide an estimate of unpaid claims ceded to the company's reinsurers, for comparison to the reinsurance recoverable amount recorded as an asset on a GAAP basis.

Actuaries providing estimates of unpaid claims on a SAP basis must also be aware of state regulations under which the company is recording its loss reserves. For example, while the National Association of Insurance Commissioners Accounting Practices and Procedures Manual permits companies to discount workers' compensation reserves on a tabular basis,[5] certain states have varying requirements with respect to whether and how the tabular discount is applied. For instance, as of December 31, 2018, the state of Montana permitted discounting of both workers' compensation indemnity and medical tabular reserves (excluding LAE) but required use of a specific interest rate in the calculation (4%).[6]

To take this one step further, actuaries issuing Statements of Actuarial Opinion should include a statement within the opinion stating that the company's recorded loss and loss adjustment expense reserves "meet the requirements of the insurance laws of (state of domicile)."[7] The opining actuary is therefore required to read the state regulations and confirm that the recorded reserves meet the state laws.

The accounting convention is not only important to the reserving actuary for an insurance company, but also to actuaries who perform other jobs, including but not limited to the following:

- Working with regulators to monitor the financial health of insurance companies

[5] According to page C-3 of the American Academy of Actuaries, 2018 Property/Casualty Loss Reserve Law Manual, tabular reserves are defined as "indemnity reserves that are calculated using discounts determined with reference to actuarial tables that incorporate interest and contingencies such as mortality, remarriage, inflation, or recovery from disability applied to a reasonably determinable payment stream. This definition shall not include medical loss reserves or any loss adjustment expense reserves."

[6] American Academy of Actuaries, Property/Casualty Loss Reserve Law Manual, 2018, page 250.

[7] NAIC, Annual Statement Instructions Property/Casualty, 2018, page 12.

- Pricing and designing insurance products, including development of profit margins
- Determining capital requirements to support the various risks of an insurer
- Evaluating risk transfer of reinsurance contracts
- Assessing reserve adequacy for non-insurance entities, such as organizations that self-insure or retain a portion of their property/casualty insurance exposures
- Preparing tax returns
- Appraising and valuing insurance companies in merger and acquisitions

For each of the above, the result of the work performed will differ depending on the accounting framework used, illustrating the need for actuaries in different disciplines to be knowledgeable about the various accounting and financial reporting frameworks.

CHAPTER 3. OVERVIEW OF THIS PUBLICATION

ROADMAP

This publication begins with an overview of basic accounting concepts (Part II. Overview of Basic Accounting Concepts) and then delves into the fundamental aspects of the statutory Annual Statement and certain supplemental filings, that provide the means for financial reporting in the U.S. under Statutory Accounting Principles (SAP) (Part III. SAP in the U.S.: Fundamental Aspects of the Annual Statement and Part IV. Statutory Filings to Accompany the Annual Statement). Measurement tools used to evaluate the financial health of a property/casualty insurance company are discussed in Part V. Financial Health of Property/Casualty Insurance Companies in the U.S. These tools are particularly important to regulators in monitoring solvency for the purpose of protecting the stakeholders of an insurance company. We then investigate differences between statutory reporting and other financial reporting frameworks in the U.S., namely Generally Accepted Accounting Principles, International Financial Reporting Standards and tax accounting in Part VI. Differences from Statutory to other Financial/Regulatory Reporting Frameworks in the U.S. We move on to Canada to provide a discussion of Canadian accounting principles (Part VII. Canadian-Specific Reporting). The publication closes with a discussion of the future of SAP and evolution of new accounting frameworks, differentiating between what is "real" and what is only in the discussion phase at the time of publication of this text (Part VIII. The Future of SAP).

ANNUAL STATEMENTS REFERENCED THROUGHOUT THE PUBLICATION

The Casualty Actuarial Society (CAS) Syllabus Committee and authors of this publication agreed that it would be helpful for students studying for the CAS exams to be able to rely as much as possible on one insurance company throughout the publication to illustrate the major concepts. For the U.S. examples, the CAS Syllabus Committee has assisted us in creating excerpts of a 2011 Annual Statement for a fictional insurance company named Fictitious Insurance Company (Fictitious). The excerpts of this statement are contained in Appendix I of this publication.

We have relied on the Annual Statement excerpts for Fictitious for the more detailed examples and calculations. We also referenced the National Association of Insurance Commissioners 2011 Property and Casualty Annual Statement Blank, which was also included on the CAS Exam 6 U.S. Syllabus at the time this publication was originally written. We have updated the dates in the Fictitious Annual Statement to year-end 2018, as well as specific schedules noted in the Foreword of this edition. We recommend that the current version of the Annual Statements (Blank and those for specific companies referenced on the current Exam 6 U.S. Syllabus) be viewed side by side with this publication when reading and working through examples and following the flow of exhibits, notes, interrogatories, and schedules within the Annual Statement.

For Canada, we have used the 2018 aggregate experience of Canadian insurers as published on the website of the Office of the Superintendent of Financial Institutions (OSFI). As with the U.S. chapters, we recommend that the student have this information by his or her side when reading the Canadian chapters of this publication.

We also acknowledge that there may be differences between exhibits within an Annual Statement; such differences are due to rounding.

BACKGROUND ON FICTITIOUS INSURANCE COMPANY

The authors of this publication felt it important to provide some background information on Fictitious and describe the landscape in which Fictitious was operating during the time period covered when the Annual Statement was originally compiled (December 31, 2011). This will provide additional context for students when reading and interpreting the figures contained therein.

Fictitious is a publicly held property/casualty insurance company in the U.S. As displayed in Table 1, approximately one-third of the company's writings in 2018 were in personal lines markets, with the remainder in commercial markets. Homeowners multiple peril (homeowners) was the largest single line written in 2018 on a net of reinsurance basis (17% of net written premium), followed by workers' compensation (15% of net written premium) and other liability – occurrence (13% of net written premium). The company wrote business in all 50 states in the U.S. and was therefore exposed to natural catastrophes and weather-related events in 2018.

TABLE 1

Fictitious Insurance Company
Distribution of 2018 Written Premium (WP) by Line of Business (USD in 000s)

Line of Business	Direct WP $	Direct WP %	Net WP $	Net WP%
Personal lines				
Homeowners multiple peril	4,646	16%	4,555	17%
Private passenger auto liability	2,804	10%	2,804	10%
Private passenger auto physical damage	1,661	6%	1,665	6%
Subtotal, personal lines	9,111	32%	9,024	34%
Commercial lines				
Fire	3,254	11%	2,484	9%
Commercial multiple peril (non-liability portion)	3,243	11%	3,032	11%
Commercial multiple peril (liability portion)	1,760	6%	1,645	6%
Workers' compensation	4,394	15%	4,022	15%
Other liability – occurrence	3,749	13%	3,502	13%
Commercial auto liability	2,334	8%	2,250	8%
Commercial auto physical damage	651	2%	647	2%
Fidelity	138	0%	146	1%
Subtotal, commercial lines	19,523	68%	17,728	66%
Total	28,634	100%	26,752	100%

Insurers were hit hard by record levels of catastrophe losses in 2017 and 2018, following a sustained period of benign activity from 2012 through 2016. Headline events included hurricane activity in North America (Harvey, Irma and Maria in 2017; Florence and Michael in 2018) and Japan (Jebi, Trami and Mangkhut in 2018). California saw its most costly wildfire season for the second year running, with the Camp Fire alone leading to approximately $10 billion of insured losses.

2017 events in the U.S. are estimated to have cost the (re)insurance industry approximately $106 billion, with a further $50 billion in 2018, significantly exceeding the prior 10-year average of just under $20 billion.[8]

As we shall see through examination of the company's 2018 Annual Statement, Fictitious did not escape the financial impact of the natural catastrophes in the U.S., but surprisingly was relatively unscathed by the events in 2017. During 2018, Fictitious experienced a net loss from underwriting of $2 million, largely due to events including Hurricanes Florence and Michael and the California wildfires. The company's net loss and loss adjustment expense (LAE) ratio for accident year 2018 was about 10 percentage points higher than that for accident year 2017.

[8] https://www.iii.org/article/spotlight-on-catastrophes-insurance-issues, December 20, 2019

When reading this publication and reviewing the 2018 Annual Statement for Fictitious Insurance Company, note that Fictitious tightened its underwriting standards in reaction to the soft insurance market in commercial lines.[9] Despite the company's efforts, soft market conditions also contributed to the increasing loss and LAE ratio in 2018.

[9] A soft market is one where insurance prices are low and therefore insurance is cheaper for the consumer. The insurance industry tends to observe increasing loss ratios in a soft market because the consumer is paying less in premiums for the same level of insurance protection.

PART II. OVERVIEW OF BASIC ACCOUNTING CONCEPTS

INTRODUCTION TO PART II

Part II of this publication will provide a detailed discussion on the construction, use and interpretation of an insurance company's financial statements and other financial information. Before beginning that detailed discussion, we will introduce two important accounting topics: primary financial statements and key accounting concepts. Both are recurring topics throughout this publication, and a basic understanding will be helpful to students.

CHAPTER 4. PRIMARY FINANCIAL STATEMENTS

PRIMARY FINANCIAL STATEMENTS

Although there are numerous accounting frameworks, they generally rely on a few primary financial statements. Of these, the two most commonly referenced are the balance sheet and the income statement. Other primary financial statements include the statement of capital and surplus (or equity) and the statement of cash flow. The financial statements are accompanied by subsequent pages of notes, which provide additional information that helps explain balances within the financial statements.

BALANCE SHEET

The balance sheet presents all of a company's assets and liabilities as of a specific point in time. Assets are defined as resources obtained or controlled by a company as a result of past events that have a probable future economic benefit to the company. Liabilities are probable sacrifices of economic benefits arising from present obligations of a company to transfer assets or provide services to other entities in the future as a result of past events. The relationship between the assets and the liabilities of a company is important, because it is a measure of the company's ability to use its assets to fully satisfy its liabilities. The difference between assets and liabilities is generally referred to as net worth (or equity); in the case of an insurance company reporting under Statutory Accounting Principles (SAP), this difference is referred to as statutory surplus (or policyholders' surplus)[10].

One unique aspect of insurance companies' balance sheets is the inherent uncertainty associated with the estimation of the liability for unpaid claims and claim adjustment expenses (loss reserves). While a certain amount of estimation is involved in other industries' accounting, the more significant estimates are generally with respect to asset valuation and collectability and pale in comparison to the uncertainties involved in estimating loss reserves. Actuaries typically have an important role in valuing insurance company liabilities and are therefore critical to the accurate preparation of the balance sheet.

INCOME STATEMENT

While the balance sheet presents the financial balances of a company at a point in time, the income statement reveals a company's financial results during a specific time period. The general types of accounts that are used as a means to measure these results are revenue and expenses. Revenues are inflows or enhancements of assets or settlement of liabilities (or a combination of both) from delivering goods or services during the specific time period. Expenses are outflows or other use of assets or incurrence of liabilities (or a combination of

[10] Note that the assets reflected in this relationship only include "admitted" assets because Statutory Accounting Principles (SAP) do not allow insurers to take credit for nonadmitted assets in surplus. Admitted versus nonadmitted assets are discussed later in this text.

both) from delivering or producing the goods and services that were provided during the specific time period. The difference between the amount of the revenues and expenses during the period is referred to as net income if it is positive or net loss if it is negative.

The nature of the service provided by insurance companies, which is a promise to pay claims in the future if some specific criteria are met, creates unique accounting challenges. Insurance accounting standards address how to earn the premiums insurance companies are paid and how to measure and when to record claim costs resulting from the insurance coverage. Again, actuaries usually play a significant role in the estimation of the amount and timing of these future payments and therefore are critical to the accurate preparation of the income statement. Another important source of revenue for insurance companies is investment income, which will be discussed in Chapter 8. The Statutory Income Statement: Income and Changes to Surplus.

CAPITAL AND SURPLUS

The statement of capital and surplus reflects certain changes in surplus that are not recorded in the income statement and reconciles the beginning surplus to the ending surplus for the reporting period. This statement is similar for insurance companies and for other types of companies; however, there are several items within the statement of capital and surplus, such as those related to nonadmitted assets and the provision for reinsurance, that are unique to insurers. These items and others will be discussed in Chapter 7. Statutory Balance Sheet: A Measure of Solvency and Chapter 8. The Statutory Income Statement: Income and Changes to Surplus.

CASH FLOW

The cash flow statement receives less attention but is also important. This financial statement is necessary because the timing of the receipt or payment of cash for a revenue or expense does not necessarily coincide with the recognition of that revenue or expense from an income statement perspective. In other words, even if the cash payment is received sometime before or sometime after the good or service is provided, the associated revenue is generally recognized at the time the good or service is provided. The cash flow statement presents all operations strictly from a cash perspective.

In other industries, companies face liquidity issues when they cannot collect revenue in cash on a timely basis, and this type of liquidity issue would be made evident by the statement of cash flows. An example of this would be a manufacturing company that sold products on credit but was not able to collect the cash on a timely basis to pay their expenses. For insurance companies, this specific type of liquidity issue is less likely to occur due to the collection of premiums at the onset of the policy and the subsequent payment of losses. This difference in the order of cash receipts and disbursements somewhat diminishes the importance of cash flow statements for insurance companies. Further, actuaries are not

generally involved in or necessary for the preparation of the cash flow statement, so this financial statement is not covered in detail in this publication.

NOTES TO FINANCIAL STATEMENTS

In addition to the four primary financial statements already discussed, another important element is the notes to financial statements. The notes include quantitative and qualitative disclosures regarding the significant accounts presented in the financial statements. This includes matters that are relevant or may be relevant to the users of the financial statements. For instance, the notes will typically describe the basis of accounting used in the preparation of the financial statements, as well as any important details on specific aspects of the financial statements that are based on estimates or subject to uncertainty. We will discuss several of the footnotes to the financial statements that are of specific importance to actuaries in Chapter 10. Notes to Financial Statements.

CHAPTER 5. KEY ACCOUNTING CONCEPTS

Throughout each major accounting framework, there are several common key concepts. Understanding these key concepts will be beneficial to anyone who is involved in using or preparing financial statements because it will allow them to appreciate the purposes of and the differences between each framework. A few of the most important and relevant concepts are below.

- Liquidation vs. going concern: When preparing financial statements, it is possible to view the company as either an ongoing business (going concern) or as a run-off of the current assets and liabilities (liquidation). Either perspective may be appropriate depending on the user and purpose of the financial statements. For instance, investors would generally be most interested in the value of a business as a going concern, whereas regulators may think in terms of a liquidation perspective, given that they are primarily interested in the ability of the company to satisfy its policyholder obligations.

- Fair value vs. historical cost: There are often multiple possible approaches to valuing a given asset or liability. The choice of approach is of particular importance when the value of that asset or liability is uncertain. Recording an asset or liability at fair value means recording it at a value that it would be bought or sold for in the open market, while recording at historical cost means valuing it at the original purchase price less depreciation. In cases where the value of an asset or liability is uncertain, there is a trade-off between the reliability of the historical cost method (in that it is objectively verifiable) and accuracy of the fair value approach (in that it is more consistent with the actual market value).

- Principle-based vs. rule-based: Each aspect of any accounting framework is generally guided by either a principle or a rule. A principle describes a general accounting approach that must be interpreted and applied, while a rule provides specific accounting guidance on how something should be done. There is a trade-off because the rules-based guidance may be easier to understand and to audit, but a principles-based approach is generally more adaptable to changes in the business environment.

PART III. SAP IN THE U.S.: FUNDAMENTAL ASPECTS OF THE ANNUAL STATEMENT

INTRODUCTION TO PART III

In the U.S., property/casualty insurance companies report their financial results to state insurance regulators in what is called the Annual Statement. For those who have never used or seen an Annual Statement, it is an 8.5" x 14" book. The Property/Casualty Annual Statement is identified by its yellow cover, while the Life Annual Statement's cover is blue (known as the yellow book and blue book, respectively). Both types of Annual Statements are publicly available documents.

The Annual Statement is developed and maintained by the National Association of Insurance Commissioners and is often referred to as "the Blank." The Blank is the template that insurance companies use to report under Statutory Accounting Principles (SAP), and is uniformly adopted by all states. This allows insurance companies licensed in multiple states to prepare one Annual Statement for filing with all states. The Annual Statement is accompanied by NAIC instructions that are generally adopted by all states, though there are instances of specific differences and exceptions.

The first page in the Annual Statement is the Jurat page, which provides basic information about the reporting entity, such as name, NAIC code, address, name of preparer and title, and officers of the reporting entity. The notarized signatures of officers of the reporting entity are included on this page, attesting to the accuracy of the information contained therein.

Following the Jurat page are the statutory financial statements. The statutory Annual Statement contains other exhibits and schedules that provide further insight into the insurance company's statutory financial statements and historical experience. These include General Interrogatories; Five-Year Historical Data; and Schedules A, B, BA, D, DA, F, P, T and Y.

In Part III. SAP in the U.S.: Fundamental Aspects of the Annual Statement, we will walk through the Property/Casualty Annual Statement, beginning with the financial statements, and discuss the related accounting requirements. We provide examples to illustrate the uses of the Annual Statement and how certain amounts are calculated and compiled.

CHAPTER 6. INTRODUCTION TO STATUTORY FINANCIAL STATEMENTS

INTRODUCTION

This chapter focuses on Statutory Accounting Principles (SAP) and specifically discusses the fundamental aspects of the Annual Statement, including the financial statements themselves (the balance sheet and income statement, for example), as well as the other exhibits and filings that accompany the Annual Statement (such as various schedules, the Insurance Expense Exhibit and the Risk-Based Capital calculation). Part V. Financial Health of Property/Casualty Insurance Companies in the U.S. will discuss how this information can be used to assess the financial health of an insurance company and Part VI. Differences from Statutory to other Financial/Regulatory Reporting Frameworks in the U.S. will focus on differences between SAP and the other financial and relevant regulatory reporting regimes.

SAP AND THE NAIC

The National Association of Insurance Commissioners (NAIC) operates through various committees that comprise state insurance commissioners and their staff. Through these committees, the NAIC regularly updates SAP and creates model insurance laws and regulations that individual states may elect (or be required) to adopt. While this generally leads to a good deal of uniformity in insurance regulation, there are still instances of differences between states. For example, individual states have the ability to permit accounting practices that differ from NAIC SAP ("permitted practices") and model laws and regulations are not always enacted by all states exactly as adopted by the NAIC.

It is worth noting that the NAIC may revise the Annual Statement each year, and these changes are described on the NAIC website. The basis of the examples and exhibits provided in this section of the publication are based in part on the structure and information provided in the 2011 industry Annual Statement, with specified updates based on the 2018 Annual Statement as noted in Foreword of this publication.[11]

[11] Accessed via a sector-specific information and research firm in the financial information marketplace.

CHAPTER 7. STATUTORY BALANCE SHEET: A MEASURE OF SOLVENCY

As previously noted, the primary focus of statutory accounting is to highlight potential solvency issues (an insurance company's capability to meet its obligations to its policyholders and creditors when due). Consequently, the most important aspect of an insurance company's financial statements to an insurance regulator is the strength of its balance sheet (i.e., the extent to which its admitted assets are sufficient to meet all liabilities).

RELEVANCE TO ACTUARIES

Solvency and the balance sheet are relevant to the actuary for two primary reasons.

First, actuaries traditionally have some responsibility for the loss and loss adjustment expense (LAE) reserves, which represent the majority of the liabilities for property/casualty insurance companies. Actuaries may either participate directly in the reserve-setting process, or they may assess the reasonableness of the reserves established by company management. Actuaries involved in either of these functions are focused on the liabilities for losses and LAE on the Liabilities, Surplus and Other Funds page of the Annual Statement (page 3).

Second, actuaries often have a role in determining or assessing the amount of capital that an insurance company requires to support the risks that it has taken through its business operations. In the context of statutory accounting, this would be based on an actuary's understanding of the Risk-Based Capital (RBC) framework to calculate the required capital at a given point in time (see Chapter 19. Risk-Based Capital). More broadly speaking, actuaries may evaluate the surplus needs on other bases, including on an economic basis, which is guided by the insurer meeting some economically defined criteria for solvency. In both of these cases, an actuary who is evaluating an insurance company's capital will need to be familiar with the admitted assets and the liabilities on the balance sheet (pages 2 and 3), as well as the risk characteristics of each of those items.

This chapter will provide an overview of the composition of the two main categories in the statutory balance sheet:

- Assets (page 2)
- Liabilities, Surplus and Other Funds (page 3)

ASSETS[12]

Assets can be broadly defined as a property, right or claim arising from past events that has future value. From an individual perspective, we are all accustomed to the concept of owning

[12] In general, this section aligns with Chapter 2 (Assets) of Property Casualty Insurance Accounting by the Insurance Accounting and Systems Association (IASA). References to other sections in IASA that were previously on the CAS Syllabus will be included throughout. Readers seeking additional detail may consult with IASA on these topics or other topics.

financial assets, such as stocks and bonds, and owning real assets, such as a home or vehicle. Insurance companies own various assets in the same way that an individual does, and those assets are summarized on page 2 of the Annual Statement Blank (the balance sheet). Some of these assets are consistent with assets of non-insurance entities, and some are specific to insurance companies.

Table 2 summarizes the major assets held by the U.S. property/casualty insurance industry as of December 31, 2018.[13] The first column indicates the numerical label for each item, as presented on page 2 of the Annual Statement. Only the material line items are shown in this summary.

[13] Accessed via a sector-specific information and research firm in the financial information marketplace.

TABLE 2

Assets: Total U.S. P&C Insurance Industry
U.S. 2018 Statutory Financials, NAIC Format (USD in OOOs)

Line	Description	Assets	% of Total	Nonadmitted Assets	Net Admitted Assets	% of Total
1.	Bonds	1,027,815,046	49%	312,840	1,027,502,206	51%
2.1	Preferred stocks	5,454,309	0%	7,203	5,447,106	0%
2.2	Common stocks	395,451,664	19%	5,734,811	389,716,853	19%
4.	Real estate	13,727,077	1%	43,525	13,683,552	1%
5.	Cash, cash equivalents and short-term investment	101,993,264	5%	29,624	101,963,640	5%
8.	Other invested assets	149,642,333	7%	14,765,778	134,876,555	7%
12.	Subtotal, cash and invested assets	1,725,865,280	83%	22,972,981	1,702,892,299	84%
15.1	Uncollected premiums and agents balances	66,184,809	3%	3,309,043	62,875,766	3%
15.2	Deferred premiums and agents balances	121,849,858	6%	316,170	121,533,688	6%
16.1	Amounts recoverable from reinsurers	42,558,949	2%	4,258	42,554,691	2%
18.2	Net deferred tax asset	25,779,026	1%	6,952,286	18,826,740	1%
23.	Receivables from parent, subsidiaries and affiliates	22,055,541	1%	427,692	21,627,850	1%
25.	Aggregate write-ins	33,353,894	2%	10,307,386	23,046,508	1%
	Other non-invested assets	41,352,758	2%	9.766,723	31,586,035	2%
	Subtotal, non-invested assets	353,134,835	17%	31,083,558	322,051,277	16%
28.	Total	2,079,000,115	100%	54,056,540	2,024,943,576	100%

As shown in Table 2, the U.S. property/casualty industry held $2.1 trillion dollars of assets as of December 31, 2018. The statutory balance sheet makes two broad distinctions regarding assets held by insurers:

- Cash and invested assets vs. non-invested assets: Assets are categorized by this criterion to identify the proportion of an insurer's asset that is readily convertible to cash. The "cash and invested assets" are assets that could be readily sold in near term to meet the insurer's liabilities, while the "non-invested assets" are less liquid. This distinction is in line with the emphasis that statutory accounting places on solvency. Rows 1 through 12 on the Assets page include cash and invested assets, while rows 13 through 25 include non-invested assets.

- Admitted vs. nonadmitted assets: As shown in Table 2, there are separate columns that depict the amount of assets that are nonadmitted. These nonadmitted assets, which represent about 3% of total assets, are not recognized by state insurance departments in evaluating the solvency of an insurance company for statutory

accounting purposes. The rationale for this exclusion is that those nonadmitted assets are not readily convertible for use to meet an insurer's liabilities now or in the future and thus would not be reasonable to consider in evaluating a company's solvency. In many cases nonadmitted assets are determined by formulae established by the National Association of Insurance Commissioners (NAIC). As shown in Table 2, there are nonadmitted assets in the cash and invested assets categories and the non-invested assets categories, though the proportion of nonadmitted assets is much lower for cash and invested assets. Several common examples of nonadmitted assets will be discussed in the description of the specific asset classes below (such as certain uncollected and deferred premiums and agents' balances and net deferred tax assets), which will help to demonstrate this point.

Those distinctions aside, it is clear from Table 2 that the largest asset class for the property/casualty industry in 2018 was bonds, which represented 49% of the industry's total assets, followed by common stocks, which represented 19% of the industry's total assets. These statistics have remained relatively consistent over the years. While most actuaries will not need to have a deep understanding of each of the asset classes on the balance sheet, is it worthwhile to know a few relevant details on the largest classes to have a fundamental understanding of the balance sheet.

Bonds (Line 1)

Bonds are securities that pay one or more future interest payments according to a fixed schedule. The face value of a bond refers to the amount that is to be paid in the final single payment at the maturity of a bond. When an insurance company purchases a bond, the current value of that bond is recorded as the actual cost, including brokerage and other fees. This purchase price may be more or less than the face value of the bond.

To the extent that the purchase price is higher (or lower) than the face value of the bond, a bond premium (or discount) is recorded as a part of the recorded amount. Over the life of the bond, that bond premium or bond discount will be amortized according to a constant yield approach. The reason for this amortization is that when the bond ultimately matures, the amortized value will be equal to the face value, eliminating a lump sum gain or loss at the maturity of the bond.

After the purchase, statutory accounting indicates that bonds be recorded at one of the following bases:

- Amortized cost
- The lower of amortized cost or fair value

The designation that the NAIC's Security Valuation Office (SVO) assigns to the bond determines the applicability of the two bases above. The six possible designations are NAIC 1

through NAIC 6, which range from the "highest quality" bonds to "bonds in or near default," respectively. Bonds with the two highest designations (NAIC 1 and 2) are carried at amortized cost, while bonds with designations of NAIC 3 ("medium quality") and below are carried at the lower of amortized cost or fair value. The amount at which a bond is recorded, following these criteria, is referred to as the adjusted carrying value.

Schedule D of the Annual Statement provides details on the specific bonds that are held by an insurance company, including the following:

- Type of issuer (e.g., federal, state or corporate)
- Maturity (e.g., one year, one year to five years)
- NAIC Class (Class 1 through Class 6)

Based on the industry aggregate Annual Statement as of December 31, 2018, insurance companies' bond portfolios were made up of approximately 44% industrial bonds, 24% special revenue bonds, and 17% U.S. government bonds. By maturity, just over half of bonds held were 5 years to maturity or less, with the majority of the remainder having maturities between 5 and 10 years. Furthermore, approximately 80% of bonds held by insurers were in the NAIC Class 1.

Given that bonds are the largest asset class for property/casualty insurers, an actuary or other user of the financial statements who is reviewing the financial health of an insurance company may benefit from reviewing the detail in Schedule D.

Stocks (Lines 2.1 and 2.2)

As shown in Table 2, approximately 19% of insurers' assets were in common or preferred stock. Stocks are securities that represent an ownership share in a company. Those ownership shares are subordinate to bondholders and creditors. Common stock ownership confers voting privileges and may pay a dividend, though the dividend is not guaranteed. Preferred stock does not confer voting privileges but usually provides a guarantee on dividends to be paid, and usually has preference to common stock in the event of liquidation.

At purchase, stocks are valued at cost plus any brokerage or related fees. After purchase, publicly traded stocks are recorded at fair value, which is based on the market price that is readily available to the public and which can generally be determined from external pricing services. If a stock is not publicly traded or a price is not available, the NAIC's SVO will determine a fair value. Preferred stocks are assigned similar NAIC designations as bonds with six rating levels, which dictate whether they are valued at cost, amortized cost or fair value based on the NAIC designation.

An actuary or other user of the financial statements who is evaluating the financial health of an insurance company should take note of a property and investigate further if an insurance

company has a relatively larger portion of their assets in stocks, compared to the overall industry.

Real Estate (Line 4)

Three classes of real estate are presented separately on the Assets page of the Annual Statement:

- Properties occupied by the company
- Properties held for the production of income
- Properties held for sale

These classes are relatively self-explanatory, though one detail to be aware of is that if a company and its affiliates occupy less than 50% of a property, it is classified as either a property held for production of income or a property held for sale (as opposed to a property occupied by the company). Properties in the first two categories are generally recorded at depreciated cost, while properties that are held for sale are recorded at the lower of depreciated cost (i.e., carrying amount) or fair value less encumbrances and estimated costs to sell the property.

Details of a company's real estate transactions and holdings are presented in Schedule A of the Annual Statement.

Cash, Cash Equivalents and Short-Term Investments (Line 5)

This asset class generally includes assets that are immediately convertible to cash. As of December 31, 2018, these assets represented nearly 5% of insurers' total assets, and approximately two-thirds of these assets were in short-term investments.

Cash equivalents must have an original maturity of less than three months, and short-term investments must have an original maturity of one year or less. In the Annual Statement, details on cash are provided in Schedule E-1, cash equivalents are described in Schedule E-2, and short-term investments are found in Schedule DA. Further, a reconciliation is made in the Cash Flow statement showing cash, cash equivalents and short-term investments at the beginning of the year, adjusted for net cash (inflows minus outflows from operations, investments, financing and miscellaneous sources) during the year. The result is the amount of cash, cash equivalents and short-term investments at the end of the year, which is shown in line 5 of the Assets page.

Uncollected and Deferred Premiums and Agents' Balances (Lines 15.1 and 15.2)

These two asset classes represent premiums that have been written but have not yet been received. Although the names of the asset classes refer to "agents' balances" (or balances due from policies sold by insurance agents, as intermediaries between the insurance company

and the policyholder), both asset classes may also include uncollected premiums for policies sold directly to policyholders.

Uncollected premiums and agents' balances include premiums due on or before the financial statement date, while deferred premiums and agents' balances include premiums due after the financial statement date. Both classes include installment premiums that meet those timing criteria as well.

Premiums that are more than 90 days past due from an agent or a direct policyholder are considered nonadmitted assets. Furthermore, an insurer may determine that agents' balances that are 90 days or more overdue are unlikely to be collected (or "impaired"). In this event, the insurer should write-off the uncollectable balance.

These two classes together represented nearly 10% of the industry assets as of December 31, 2018, highlighting that collectability of these assets is relevant to a company's financial health and a measure of the efficiency of its collections' department. An actuary or other user of the financial statements who is reviewing the financial health of an insurer may consider the overall magnitude of a company's uncollected and deferred agents' balances and the percentage of agents' balances that are nonadmitted. Either one of these metrics could be benchmarked to the overall industry; a company having a significantly higher portion of its assets in these two classes relative to the industry would warrant further analysis to understand the impact to liquidity.

Amounts Recoverable from Reinsurers (Line 16.1)

This asset class reflects amounts that are expected to be recovered from a reinsurer on losses and LAE that have been paid by the company, but do not include expected reinsurance recoveries for loss and LAE reserves. The reason that expected recoveries for loss and LAE reserves are not included is that loss and LAE are already reflected net of reinsurance on the balance sheet. Additional detail on expected recoveries for both paid amounts and reserves are included in Schedule F, which will be discussed in detail in Chapter 14. Schedule F. The detail included in Schedule F allows an actuary or other user of the financial statements to assess the quality and collectability of the reinsurance recoverables.

Net Deferred Tax Assets (Line 18.2)

Deferred tax assets (DTAs) represent expected future tax benefits related to amounts previously recorded in the statutory financial statements and not expected to be reflected in the tax return as of the reporting date. They are referred to as "net" DTAs because they are recorded net of any deferred tax liabilities (DTLs) that exist. Two common sources of DTAs relevant to the actuary are the following:

- The difference in tax accounting and statutory accounting for loss reserves
- The carryforward of net operating losses from previous years

The first source of DTAs is particularly relevant to actuaries. For tax reporting purposes, loss reserves are discounted when determining taxable income. This means that an insurance company is not able to deduct from taxable income the full amount of losses that are incurred during a year. Therefore, assuming loss reserves are growing, a company's income on a tax basis is higher than the company's pre-tax income on a statutory basis in the current year. In the future, as this discounting unwinds, the insurer will get a tax deduction, which will not be recorded in statutory financial statements because it was already recorded in the year the reserves were established. The value of this future deduction (21% of the deduction) represents the DTAs. This asset can be particularly significant for growing companies.

The second source of DTAs of relevance to the actuary (carryforward of net operating losses) occurs when an insurance company has net operating losses in one financial year and expects those losses to offset taxable income in the future, thereby reducing future tax liability.

For any DTA, an insurer can only record the portion of the asset that is expected to be realized, based on available evidence. Furthermore, the insurer must perform an admissibility test to determine the amount of a DTA that can be considered as an admitted asset.

As shown in Table 2, DTAs were one of the largest components of nonadmitted assets reported at December 31, 2018, representing $7 billion of the total $54.1 billion in nonadmitted assets, or 13%.

Receivables from Parent, Subsidiary and Affiliates (Line 23)

Many insurance companies are members of a national or international insurance group or may be affiliated with other insurance companies that are owned by the same ultimate parent company. These affiliates often share services or resources, such as internal support staff or third-party vendor agreements. In these cases, receivable balances for these services or resources exist between the parties.

As shown in Table 2, these receivables accounted for about 1% of assets held by the industry at December 31, 2018. If an individual company had a significantly larger portion of their assets in the form of receivables, a user of those financial statements may consider investigating further, as those receivables may not be as liquid or available as other asset types. More specifically, the user could attempt to ascertain the specific source of the receivables and the proportion of the receivables that are paid on time.

Other Nonadmitted Assets

In addition to the examples of nonadmitted assets already mentioned (agents' balances more than 90 days overdue and net DTAs that are do not meet the statutory admissibility test), there are other sources of nonadmitted assets. Several common examples include:

- Amounts held of specific types of bonds, stocks, mortgage loans or real estate that are in excess of limitations that exist in specific states
- Electronic data processing equipment and operating system software in excess of specified limits (i.e., percentage of adjusted capital and surplus)
- Nonoperating system software
- Furniture, fixtures, equipment and leasehold improvements
- Balances due from a broker when a security has been sold but the proceeds have not been received that are still outstanding more than 15 days after settlement
- Funds held or deposited with reinsured companies that exceed the associated liabilities or are held by an insolvent reinsured company
- 10% of deductibles recoverable on high deductible insurance policies in excess of collateral specifically held and identifiable on a per policy basis

As previously noted, nonadmitted assets only represented about 3% of the total industry assets at December 31, 2018. However, due to their importance when measuring solvency, an actuary should be familiar with the sources of nonadmitted assets. If an actuary or other user of the financial statements observes that an insurer has a larger proportion of nonadmitted assets than the industry average, it may be worthwhile to investigate further to understand the source of those nonadmitted assets because they could be indicative of a problem with the business.

LIABILITIES AND SURPLUS[14]

A liability is an obligation that the company must fulfill, based on past events or transactions, which will require the use of the company's resources. Under the literal definition of solvency, a company must have assets that are at least equal to its liabilities to remain solvent.

To be prudent and to comply with RBC requirements (see Chapter 19. Risk-Based Capital), most insurance companies have admitted assets that significantly exceed their liabilities. The amount of this excess of admitted assets over liabilities is generally referred to as surplus. Surplus can be viewed as the equity in the business or as the source of protection to the policyholders. These three amounts follow the relationship shown below:

Admitted Assets = Liabilities + Surplus

Or, equivalently,

Admitted Assets – Liabilities = Surplus

Because the combination of liabilities and surplus are equal to assets, liabilities and surplus are presented on the same page (page 3) of the Annual Statement. The assets reflected in the

[14] Aligns with IASA Chapter 5.

relationship above include only admitted assets because Statutory Accounting Principles (SAP) do not allow insurers to take credit for nonadmitted assets in surplus.

A breakdown of the industry liabilities and surplus amounts (page 3 of the Annual Statement) by significant account is provided in Table 3 as of December 31, 2018.[15]

TABLE 3

Liabilities, Surplus and Other Funds: Total U.S. Property/Casualty Insurance Industry
U.S. 2018 Statutory Financials, NAIC Format (USD in 000s)

Line	Description	Liabilities	% of Total
1.	Losses	547,217,016	27%
2.	Reinsurance payable on paid loss and loss adjustment expenses	29,393,074	1%
3.	Loss adjustment expenses	114,072,279	6%
5.	Other expenses (excluding taxes, licenses and fees)	8,191,309	0%
9.	Unearned premiums	275,398,145	14%
12.	Ceded reinsurance premiums payable	59,593,117	3%
13.	Funds held under reinsurance treaties	31,513,557	2%
16.	Provision for reinsurance	2,745,410	0%
25.	Aggregate write-in for liabilities	77,254,001	4%
	Other liabilities	122,643,849	6%
28.	Subtotal, liabilities	1,268,021,758	65%
29.	Aggregate write-ins for special surplus funds	83,179,182	4%
30.	Common capital stock	3,982,853	0%
34.	Gross paid in and contributed surplus	197,134,014	10%
35.	Unassigned funds	459,882,311	23%
	Other surplus and capital	12,743,455	1%
37.	Subtotal, surplus as regards policyholders	756,921,815	37%
38.	Total	2,024,943,573	100%

First, note that the total amount of liabilities and surplus shown in Table 3 ($2.025 trillion) is exactly equal to the amount of net admitted assets that were shown in Table 2. This relationship must be true given the fundamental equation of Admitted Assets = Liabilities + Surplus.

The next observation that can be made is that the insurance industry's admitted assets equal 1.6 times its liabilities as of December 31, 2018. On the surface, this suggests that the industry as a whole had sufficient assets to be able to sustain a sizeable increase in liabilities (or reduction in asset values) while still maintaining solvency, due to the current positive difference of assets relative to liabilities.

[15] Accessed via a sector-specific information and research firm in the financial information marketplace.

However, this may not be true at the individual company level, and there are also other risks that could affect surplus that are not reflected in either the recorded assets, admitted assets or liabilities (such as catastrophe risk or liquidity risk). An actuary can benchmark a company's ratio of liabilities to surplus against the current industry average. Further investigation may be warranted if the ratio is significantly higher than that of the industry. A review of the company's RBC would be the next logical step.

We can also measure each of the underlying accounts in relation to total liabilities or surplus. Together, loss and LAE reserves (lines 1 and 3) have historically been the largest liability item on a property/casualty insurance company's balance sheet. As of December 31, 2018, this item represented over 50% of total industry liabilities. This speaks to the importance of property/casualty actuaries to the financial reporting process because they are often the most suited to evaluate and establish those liabilities. The next largest liability class is unearned premium reserves, which made up approximately 22% of the industry liabilities as of December 31, 2018. Given actuaries' involvement in pricing products, actuaries certainly play a role in this premium account. To the extent the unearned premium is not adequate to cover expected future losses, LAE and maintenance expenses, additional liabilities need to be recorded. Actuaries often play a key role in that analysis.

A brief description of each of the key liabilities and surplus classes is provided below.

Loss and Loss Adjustment Expense Reserves (Lines 1 and 3)

The required basis for loss and LAE reserves under SAP is defined by Statement of Statutory Accounting Principles (SSAP) 55, Unpaid Claims, Losses, and Loss Adjustment Expenses. SSAP 55 states that the recorded liabilities for loss and LAE reserves, for each line of business and for all lines of business in the aggregate, should be based on "management's best estimate" (note that this term is not explicitly defined in the accounting guidance). Further, SSAP 55 requires that management consider the variability in the estimate of these liabilities. The standard states that management's best estimate may consider a range of estimates; in the rare instances when no point within the range is considered to be a better estimate than other points within the range, the midpoint of the range should be used.

Note that SSAP 55 refers to management's best estimate and not the actuary's best estimate or central estimate. However, management will often rely on an actuary's estimate, in whole or in part, in establishing their own best estimate to be recorded on the balance sheet. Whether or not management relies on an actuary in establishing the recorded reserves, the NAIC Model Law for Property and Casualty Actuarial Opinions (MDL-745)[16] requires that a

[16] NAIC, NAIC, Model Laws, Regulations, Guidelines and Other Resources, – MDL-745, October 2003, https://www.naic.org/store/free/MDL-745.pdf, 2019.

Statement of Actuarial Opinion be provided that attests to the adequacy of the recorded liabilities (see Chapter 16. Statement of Actuarial Opinion).

Significant detail on the loss and LAE reserves is included in Schedule P of the Annual Statement. Schedule P provides loss and LAE reserves both gross and net, and also breaks down the total reserves by line of business and accident year. Further detail on the data in Schedule P and the potential uses of that data are described in Chapter 15. Schedule P. There are also relevant references to loss and LAE reserves in the Notes to Financial Statements within the Annual Statement (see Chapter 10. Notes to Financial Statements).

Because loss and LAE reserves are often the largest most variable liability on an insurer's balance sheet, they are of critical importance to the financial health of an insurance company.

Reinsurance Payable on Losses and Loss Adjustment Expenses (Line 2)

Reinsurance payable on losses and LAE includes liabilities related to assumed reinsurance contracts and is for loss and LAE that have already been paid by the reinsured. A detailed breakdown of this amount by type of reinsurer (e.g., affiliated, authorized and unauthorized as well as U.S. and non-U.S.) is provided in Schedule F, Part 1, column 6. Liabilities under assumed reinsurance contracts for loss and LAE that are reserved by the reinsured, but not paid, are included in lines 1 and 3 of the Liabilities, Surplus and Other Funds page (loss and LAE reserves).

Other Expenses (Excluding Taxes, Licenses and Fees) (Line5)

In general, an insurance company's expenses can be separated into two broad categories: LAE and underwriting and investment expenses. Further divisions can be made within each category. The underwriting and investment expense category can be further divided into the following subcategories:

- Commission and brokerage expenses
- Taxes, licenses and fees
- General and administrative expenses
- Investment expenses

The other expenses liability item on the balance sheet generally represents incurred but not yet paid expenses from the third and fourth categories listed above. Additional detail on these expenses can be found in the Underwriting and Investment Exhibit (U&IE), Part 3, Expenses, where the unpaid expenses are shown on line 26. Although this exhibit does not provide the breakdown of the unpaid expenses by expense category, the total incurred expenses during the calendar year for these other expenses are included on lines 3 through 18.

An additional observation from U&IE, Part 3 is that each category of other underwriting expenses is split between column 1 (Loss Adjustment Expenses), column 2 (Other

Underwriting Expenses) and column 3 (Investment Expenses). This is based on an allocation that is performed by the company, and that allocation determines whether unpaid amounts in these categories appear on the balance sheet as LAE reserves or as other expenses liabilities. Additional discussion regarding other expenses is provided in Chapter 8. The Statutory Income Statement: Income and Changes to Surplus. Further detail regarding the allocation of expenses by category is also provided in the following chapter (Chapter 18. Insurance Expense Exhibit).

Unearned Premiums (Line 9)

Unearned premium represents a liability related to the unexpired portion of all policies in force. For any individual in-force policy, the total amount of written premium can be separated into earned and unearned portions. In the simplest and most common case, this split is made by the number of coverage days in the total policy period that are expired or unexpired, respectively. This approach is referred to as the daily pro rata method and is the standard method used for lines such as automobile insurance, homeowners, general liability or property.

Another approach that is sometimes used is called the monthly pro rata method. This method assumes that policies are written evenly over the course of the month. Based on that assumption, 1/24 of the premium written in a given month is expected to earn in that month. Subsequent to that, 1/12 is expected to be earned in the next 11 months, and the remaining 1/24 is earned in the thirteenth month. This abbreviated method allows for a calculation of the earned premium in each month with less data and calculations.

Some specific types of coverage require different approaches to calculating earned premium (e.g., title insurance, financial guaranty and ocean marine).

The unearned premium reserve serves the important purpose of recognizing revenue over the time period the policy is in force. Unearned premium reserves represent an insurer's obligation to provide future coverage and the potential obligation to refund the unexpired portion of the premium to a policyholder, in the event that a policy is cancelled.

While this accrual of unearned premium and the subsequent earning of that premium may appear to be an attempt to match revenues with expenses, this is not the case. Statutory accounting requires that expenses related to the acquisition of an insurance policy be realized as an expense at the time of acquisition. Despite that, the full amount of the written premium is still recorded as an unearned premium reserve at the inception of the policy. This departure from the matching principle that is commonly followed in accounting regimes exists to allow for a more conservative solvency-focused presentation because it results in lower policyholders' surplus, which is consistent with the objective of SAP.

Additional detail of the composition of the unearned premium recorded on page 3 (Liabilities, Surplus and Other Funds) of the Annual Statement can be found on page 7, which is part of the U&IE. Page 7 (U&IE Part 1) shows the breakdown of the total unearned premium into the following four categories:

- Amount unearned (running one year or less from date of policy)
- Amount unearned (running more than one year from date of policy)
- Earned but unbilled premiums
- Reserve for rate credits and retrospective adjustments based on experience

The first two categories above are relatively self-explanatory and separate the unearned premium related to policies with effective periods that are one year or less and policies with effective periods that are longer than one year. The third category, earned but unbilled (EBUB) premiums, includes estimated adjustments that will occur to the premium on audit-type policies where the actual amount of premium depends on some exposure measure, such as payroll, and is unknown until the end of the policy period. EBUB premiums are only recorded if they are reasonably estimable in the aggregate. The fourth category represents the expected adjustments that will occur on retrospectively rated policies, where the premium is variable based on the loss experience on the policy.

In addition, SAP and GAAP require an insurer to establish a separate premium liability, referred to as a premium deficiency reserve, if the unearned premium reserve for a portion of the business is not sufficient to cover the expected corresponding losses, expenses and other costs. An actuary in either a reserving or pricing role should be aware of the criteria that dictate when a premium deficiency reserve is required so they can advise management accordingly. Different criteria apply for short-duration and long-duration contracts. Additional discussion of premium deficiency reserves is included in Chapter 10. Notes to Financial Statements and Chapter 22. U.S. GAAP, including Additional SEC Reporting.

Ceded Reinsurance Premiums Payable (Line 12)

Ceded reinsurance premiums payable represent premiums that are owed to reinsurers for ceded reinsurance. This liability is recorded net of any commission retained to cover expenses that were incurred in issuing the reinsured policies. This line item does not include ceded reinsurance that are owed to the reinsurer or other funds that are being held as a deposit by the ceding company as collateral for payment of the reinsurer's obligations under specific terms of the reinsurance treaty, which is reflected in the next item, "Funds Held Under Reinsurance Treaties," discussed below.

Funds Held Under Reinsurance Treaties (Line 13)

These liabilities relate to funds that are held by a ceding company as collateral from a reinsurer. The funds provide security to the ceding company that the reinsurer will pay losses

as they come due. This is particularly common in the case of unauthorized reinsurers (companies not authorized or licensed to do business in the ceding company's state of domicile) because it allows the ceding company to avoid a statutory accounting penalty on the recoverables from the unauthorized reinsurer. This penalty is described in SSAP 62R, which states that a recoverable from an unauthorized reinsurer that is not sufficiently collateralized is a nonadmitted asset. As noted above, this category also included ceded reinsurance premiums that were payable but were held according the terms of the reinsurance agreement.

Provision for Reinsurance (Line 16)

Although the magnitude of this liability category is not large for most insurers, it is worth mentioning because it is unique to statutory accounting. The provision for reinsurance is a statutory liability established for reinsurance recoverables that may not be collectable. The change in this provision is recorded directly to surplus. This penalty applies to all reinsurers that are slow to pay or that are disputing amounts owed to the ceding company and unauthorized reinsurers that do not meet the collateral requirements of the ceding company's domiciliary state. The actual details of the calculation of the provision for reinsurance are shown in Schedule F, Part 3 (Chapter 14. Schedule F) provides the details underlying this calculation).

Note that the net loss reserves, net unearned premium and the amounts recoverable from reinsurers for paid losses on page 2 of the Annual Statement are net of reinsurance but are stated without regard for the provision for reinsurance. The provision for reinsurance appears on page 3 and is a direct reduction to surplus and does not affect a company's admitted assets or income. This direct reduction to surplus and other direct reductions to surplus will be discussed in Chapter 8. The Statutory Income Statement: Income and Changes to Surplus.

Common Capital Stock (Line 30)

Common capital stock is a surplus account that is equal to the par value of the common stock issued and outstanding. This account only applies to stock insurance companies and does not exist for mutual insurance companies. Par value is an amount set by the issuer of a stock (the insurer, in this case) when the stock is initially offered that serves as a minimum value for which the stock can be sold in that initial offering. Par value has no relation to the market value of a stock and is often set at a low amount, so this common capital stock is not a material item for most insurers (it is only included here to allow for a complete explanation). Certain state regulators have specific requirements for how the par value of shares is established. A separate, similar account is maintained for preferred stock.

Gross Paid in and Contributed Surplus (Line 34)

This account represents amounts received through the sale of stock in excess of the par value for each share. This account also exists only for stock insurers. As shown Table 3, gross paid in and contributed surplus makes up 26% of the industry surplus, and it is much larger than the common capital stock account.

Unassigned Funds (Line 35)

Unassigned funds primarily represents surplus that has been accumulated over time through retained earnings of the business. For mutual companies, all surplus will generally be reflected in the unassigned funds account because none of those funds were received due to the sale of stock. However, there are some cases in which mutual insurance companies have changed their capital structure through the creation of a mutual holding company. In those situations, the insurance companies issue stock to the holding company and will have common capital stock and gross paid in and contributed surplus accounts. Unassigned funds represented 61% of the industry surplus as of December 31, 2018.

SUMMARY

This chapter has explained the basic structure of the statutory balance sheet and has introduced some of the more significant and relevant accounts. An actuary's involvement is often primarily focused on the loss and LAE reserves, which are the largest liability on the balance sheet, but it is also important for an actuary to understand the bigger picture of an insurer's balance sheet in order to better assess the overall financial health of an insurance company.

In Chapter 13. Overview of Schedules and Their Purpose, we will discuss other schedules in the Annual Statement that provide details beyond what we have touched upon here. We will also discuss how that additional detail can be used with the contents of the balance sheet to assess the financial health of an insurance company.

CHAPTER 8. THE STATUTORY INCOME STATEMENT: INCOME AND CHANGES TO SURPLUS

While the balance sheet is of key importance to regulators and the focal point of statutory accounting, the income statement is of equal importance to the ongoing viability of an insurance company. The income statement illustrates the revenue, expenses and net income of an insurance company.

The income statement is presented on the top portion of the Statement of Income on page 4 of the Annual Statement and provides the three sources of income, before federal and foreign income taxes and dividends to policyholders, separately: underwriting income, investment income and other income.

A sample of the statutory income statement for the industry as of December 31, 2018, is presented in Table 4.[17]

TABLE 4

Statement of Income, Income Section: Total U.S. Property/Casualty Insurance Industry
U.S. 2018 Statutory Financials, NAIC Format (USD in 000s)

Line	Description	Amount
1.	Premiums earned	599,736,478
2.	Losses incurred	364,129,084
3.	Loss adjustment expenses incurred	64,189,428
4.	Other underwriting expenses incurred	167,668,693
5.	Aggregate write-ins for underwriting deductions	1,026,092
6.	Total underwriting deductions	597,093,278
8.	Underwriting income	2,618,240
9.	Net investment income earned	57,036,856
10.	Net realized capital gains (losses) less capital gains tax	10,691,626
11.	Investment income	67,728,482
12.	Net gain (loss) from agents' or premium balances charged off	(1,674,331)
13.	Finance and service charges not included in premiums	3,725,717
14.	Aggregate write-ins for miscellaneous income	(690,778)
15.	Other income	1,360,608
16.	Net income before dividends to policyholders and federal/foreign income tax	71,707,330
17.	Dividends to policyholders	3,709,994
19.	Federal and foreign income taxes incurred	7,244,680
20.	Net income	60,752,655

[17] Accessed via a sector-specific information and research firm in the financial information marketplace.

As shown in Table 4, the net income for the industry during 2018 was $60.8 billion. The subtotals for each source of income show that the industry experienced gains in underwriting, investment income and other income during 2018. Each of the three sources of income is discussed further below.

UNDERWRITING INCOME

Underwriting income is the most familiar and relevant source of income to most actuaries. Underwriting income is calculated as earned premium minus loss and loss adjustment expense (LAE), other underwriting expenses incurred, any aggregate write-ins for underwriting deductions and net income of protected cells (not shown). We note that aggregate write-ins and net income of protected cells are generally immaterial if not 0.

Actuaries are typically involved in estimating incurred losses and LAE and possibly in the calculation of earned premium, so these terms should already be familiar. On the income statement, each of the amounts labeled incurred presented also include the ultimate amount of those liabilities that occurred in the current year, and any changes in the ultimate amount of the liabilities that occurred in previous years (as shown in the formula below).

Income statement incurred = Current period ultimate + Change in prior period ultimate

where,

Change in prior period ultimate = (total all periods ultimate at end of period – total all periods ultimate at beginning of period) - current period ultimate

Actuaries may be less familiar with the item labeled "other underwriting expenses incurred." Further discussion on this other underwriting expense category is provided below.

Other Underwriting Expenses Incurred (Line 4)[18]

We already encountered other underwriting expenses briefly during our discussion of the liability for "Other Expenses (Excluding Taxes, Licenses and Fees)" in Chapter 7. Statutory Balance Sheet: A Measure of Solvency. The "Other Expenses" account represents all other expenses that were incurred but not paid at the end of the fiscal year, while this line on the income statement represents the total amount of other expenses incurred during the course of the year, whether or not they have already been paid.

As shown in Table 4, the amount of the other underwriting expenses that were incurred by the industry in 2018 was $167.7 billion, which is about 28% of net premiums earned in 2018. The magnitude of these other underwriting expenses highlights the importance of other

[18] Aligns with IASA Chapter 8.

underwriting expenses to the profitability of the industry and the importance of ensuring that they are accurately reflected in the financial statements.

Expense accounting requires that expenses be allocated in three ways:

1. NAIC operating expense classifications, which represent various types of expenses, some of which have sub-types. These 24 types are listed in the rows Underwriting and Investment Exhibit (U&IE), Part 3. Examples of these expense classifications are "commission and brokerage," "salary and related Items," and "taxes, licenses and fees." It is suggested that the reader review the U&IE, Part 3, now to see the full list of classifications.

2. Expense categories, which are broader groupings of expenses that align with the different operational functions of an insurance company. There are three of these broad categories: LAE, other underwriting expenses and investment expenses. These categories are presented in the columns of the U&IE, Part 3.

3. Line of business, of which there are 33, some of which have sub-lines. These lines of business are listed in the U&IE, Part 2A. The lines of business used for expense reporting are similar to those lines of business used in Schedule P, but not the same.

Each time an insurance company has an expense, the appropriate expense classification needs to be determined and an allocation must be made by line of business and expense category. In some cases, the entire amount of the expense can be specifically identified with one expense classification, within one expense category and for one line of business (for instance, a commission paid on a policy within a specific line of business); however, this is often not the case, such as the salary of an employee who oversees several products and functions. In those instances, an allocation of that expense must be made. Some expenses may require several allocation steps.

When an allocation is required, it will be performed based on information that is relevant to that expense. Examples of potential allocation bases are policy counts, which may be appropriate in the case of policy administration expenses; employee headcount, which may be reasonable for supervisors' salaries; or other measures of business or employee activity.

An example of a complex expense allocation would be one related to the rent that is paid for a home office that serves as a center for all operating functions. The allocation process could take place as follows:

- This expense can be specifically identified as the "rent and rent items" expense classification and therefore assigned fully to that classification.

- Because the home office is used for all company functions, its expenses would need to be allocated between all three categories: LAE, other underwriting expenses and

investment expenses. One possible approach to this is to allocate the rent to those three categories by headcount of personnel associated with each function.

- The home office is also the base for all lines of business, so the expenses may be allocated to each line of business by premium volume. This allocation to line of business could differ by expense category.

The result of the first two of these allocations can be observed in the U&IE, Part 3, and the line of business allocation is reflected in the Insurance Expense Exhibit, Part 2, which will be discussed in more detail in Chapter 18. Insurance Expense Exhibit.

Guidance for allocation of expenses is provided in the NAIC Annual Statement Instructions, and also in Statement of Statutory Accounting Principles (SSAP) 70, Allocation of Expenses. These are the sources of the uniform classifications and categories that are described above, as well as additional allocation rules. In general, the guidance indicates that specific identification of expenses is preferable to allocation but that when allocation is required, it should be apportioned based on pertinent factors or ratios such as premium, number of claims or headcount. The decision to allocate and the factors or ratios that are used when allocation is required will require judgment on the part of a company.

While the topic of expense accounting and specifically other underwriting expenses may seem of questionable relevance to an actuary, it is important to have a basic awareness and knowledge of the topic. The reason for this is twofold.

First, the overall level of company expenses will directly affect the pricing (or the adequacy of pricing) of its insurance products. A company with lower expenses relative to its competitors has the potential to be more competitive and or more profitable. Actuaries can contribute by participating in the planning and control of expenses.

Second, if the relative allocation of expenses across functions and products is not accurate, it can lead to subsidies between products that may obscure the true profitability of those products and lead to inefficient allocation of resources or even anti-selection. An actuary who understands expense allocation can prevent or minimize such subsidies and their consequences by striving to allocate expenses as accurately as possible.

The expense allocation process described above and presented in the U&IE is the driver of the other underwriting expense account on the income statement, as well as other references to expenses elsewhere in the Annual Statement.

INVESTMENT INCOME[19]

Investment income is an important source of income to insurance companies and a unique aspect of an insurer's business relative to other industries. The importance of investment income was already highlighted by the summary of the industry income statement. There we saw that in 2018 the insurance industry's positive net income was nearly entirely attributable to investment income, with limited contribution from underwriting and other income.

Because there is a delay (significant in some cases) between the time insurers receive premiums and the payment of claims, they have an opportunity to earn investment income on those funds. This makes consideration of investment income fundamental to the pricing of insurance products, which is not the case for most other industries.

The investment income item on the income statement consists of the following:

- Net investment income earned
- Net realized capital gain (loss)

Net investment income earned is primarily related to interest and dividends received on investment assets held over the course of the year. Net investment income earned does not include changes to the prices of invested assets that are sold (those are included in net realized capital gain described below). Furthermore, it is recorded on an accrual basis, meaning that it is reflected in the year in which it is earned and not necessarily the year in which the actual cash related to the income is received. The amount of this income is shown net of investment expenses and other costs, but gross of federal income taxes, on the income statement.

Net realized capital gain (loss) generally results from the sale of investments for more or less than original cost, adjusted for the amortization of premiums or accretion of discounts (amortized cost). Realized losses also result from impairment adjustments. Certain investments (primarily common stock) are recorded at fair value. The changes in the value of these investments (unrealized gains (losses)) are not included as income and instead reflected as direct adjustments to surplus. These direct adjustments to surplus are necessary because these items do not flow through net income for the current period, but the surplus must still be adjusted to maintain the admitted assets equal liabilities plus surplus relationship.

In 2018, industry net investment income earned was $57 billion, and the net realized capital gain was $10.7 billion. Detail of both the net investment income and the net realized capital gain (loss) amounts that are shown in the income statement is provided on page 12 of the Annual Statement, which includes the Exhibit of Net Investment Income and the Exhibit of Capital Gains (Losses). These exhibits provide the detail of both sources of income by asset class. The Exhibit of Net Investment Income also differentiates between the amount of income

[19] Aligns with IASA Chapter 9.

collected and the amount of income earned in the year and describes the deductions for investment expenses and other costs. The Exhibit of Capital Gains (Losses) shows the split of the gains (losses) between those gains (losses) that were realized on the sale or maturity of an asset and those that were due to impairments (labeled "other realized adjustments").

The details underlying these two exhibits are provided in Schedules A, B, D, DA and DB of the Annual Statement, which describe the assets held in each asset class as of the evaluation date of the financial statement and the assets that were sold, redeemed or disposed of during the current year.

While property/casualty actuaries are not typically involved in the investment reporting and valuation, they should have a basic understanding of these items due to their significance to product pricing and overall insurer operating results. For that reason, a discussion of the statutory reporting and valuation guidelines for each major asset class is included below. More detail will be provided on bonds and stocks because they represent the vast majority of assets held, but several other asset classes will also be discussed briefly.

Bonds

Bonds represent a majority of the assets held by insurance companies. On the Exhibit of Net Investment Income and the Exhibit of Capital Gains (Losses), bonds are reported in four categories: U.S. government bonds, bonds exempt from U.S. tax, other bonds (unaffiliated) and bonds of affiliates. The underlying detail is primarily provided in Schedule D, Part 1 (Long-Term Bonds Owned) and Schedule D, Part 4 (Long-Term Bonds Sold, Redeemed or Disposed of). Bonds that mature in one year or less are reported in Schedule DA, Part 1 (Short-Term Investments Owned).

The net investment income earned from bonds, as shown in the Exhibit of Net Investment Income, is based on the following four amounts:

1. Interest received during the year (Schedule D, Part 1, column 20 and Part 4, column 20).
2. Interest due and accrued (Schedule D, Part 1, columns 19 and 20).
3. Current year's (amortization)/accretion (Schedule D, Part 1, column 13 and Part 4, column 12)
4. Interest paid for accrued interest on dividends (Schedule D, Part 3, column 9).

The first of the four items, interest received during the year, represents all coupon payments that were received on bonds held during the year. This includes coupon payment on bonds owned at the end of the year and on bonds that were owned at the beginning of the year but sold, redeemed or disposed of during the year. This is presented on the basis of when the actual interest coupon was actually received, so an adjustment is required to convert it to an accrual basis. This adjustment is made by adding the change in the interest due and accrued

account (the second item from above) over the last year to the interest received during the year.

The explanation of the third item above, current year's (amortization)/accretion, requires us to revisit basic bond valuation. Recall that when a bond is purchased, the actual purchase price is usually different from the face value due to the difference between the coupon rate on the bond and the market interest rates at the time of purchase. To provide the buyer with an effective interest rate equal to the current market interest rate, the bond is sold at either a discount or a premium to the face value. For financial reporting purposes, that discount or premium is then realized as either positive (in the case of a discount) or negative (in the case of a premium) interest income over the life of the bond. This is referred to as either the amortization of the premium or the accretion of the discount and is reported for each bond in Schedule D, Parts 1 and 4.

The following example illustrates the accounting for a bond purchased at a discount. Assume a five-year bond with face value of $100 is purchased for $90. The purchase price is less than the face value because the coupon rate on the bond is less than the current market interest rate. This difference between the face value and purchase price is referred to as a discount, and the amount of the discount is set such that the effective yield on the bond will equal the current market interest rates at the time of purchase. The $10 discount is realized over the remaining five-year duration of the bond as investment income in addition to the actual coupon payments, such that the effective yield in each period also matches the market interest rate at the time of purchase.

The same example can be reversed for bonds that are purchased at premium (when the coupon rate exceeds the market interest rate), and that premium is amortized as negative investment income over the life of the bond to achieve an overall investment income equal to the market interest rate at the time of purchase.

The fourth and final item above, interest paid on accrued interest and dividends, is related to coupon payments that are received on bonds acquired during the year. When a bond is acquired between coupon payments, the buyer of the bond (in this case the insurance company) is required to pay the seller of the bond the portion of the coupon payment that was earned while they owned the bond. This amount is presented on Schedule D, Part 3 (Long-Term Bonds and Stocks Acquired During Current Year), column 9 (Paid for Accrued Interest and Dividends).

Each of these three items (interest received, accrual/amortization of discount/premium, interest due and accrued, and payments for accrued interest on purchases) is reflected in the investment income collected and earned columns in the Exhibit of Net Investment Income.

The other aspect of investment income related to bonds, net realized capital gains (losses), comprises the following components:

- Realized gain (loss) on sale or maturity (Schedule D, Part 4, column16)
- Foreign exchange gain (loss) on disposal (Schedule D, Part 4, column 17)
- Other than temporary impairments recognized (Schedule D, Part 1, column 14 and Part 4, column 13)

Before we discuss these items in more detail, we will first review the basic statutory accounting concepts for bonds. When a bond is purchased, it is recorded at actual cost, including brokerage and other fees. This amount is recorded as the "actual cost" in Schedule D, Part 1, column 7 and Schedule D, Part 4, column 7. In each statutory Annual Statement after the purchase of the bond, the bond is recorded at "adjusted carrying value," which is based on one of two amounts:

- Amortized cost
- The lower of amortized cost or fair value

Amortized cost represents the actual cost of the bond adjusted for the amortization of any premium or discount from the face amount (as described in the paragraphs above). Fair value generally refers to the value that an asset could be sold for in the open market.

For bonds that are designated as National Association of Insurance Commissioners (NAIC) 1 and 2 and carried at amortized cost, the adjusted carrying value of the bond is updated each year to reflect the amortization of premium or the accretion of discount. As a result, the adjusted carrying value of the bond will converge with the par value as a bond matures. For bonds that are designated as NAIC 3 through 6, the value of the bond is shown as the lesser of fair value or amortized cost. All of this information is summarized on Schedule D, Part 1, including the NAIC designation, actual cost, fair value, par value and book/adjusted carrying value.

To the extent the adjusted carrying value of a bond is adjusted to fair value, the adjustment is considered an unrealized loss and is reflected in Schedule D, Part 1, column 12. Once the bond is sold, the difference between the consideration received and the adjusted carrying value is considered a realized gain or loss and is recorded in Schedule D, Part 4, column 18. Many bonds held by insurance companies are designated as NAIC 1 or 2 and held to maturity, so there is never any capital gain or loss over the life of the bond.

Bonds denominated in a foreign currency will also be affected by changes in foreign exchange rates over time. These changes are reflected in the adjusted carrying value but are unrealized until the bond is sold, redeemed or otherwise disposed of. The change in the unrealized amount of this foreign exchange gain or loss is found on Schedule D, Part 1, column 15, and the amount of foreign exchange gain or loss that is realized upon disposal is found on Schedule D, Part 4, column 17.

The sum of the realized gain or loss on disposal and the foreign exchange gain or loss on disposal equals the total gain or loss on disposal, which is shown on Schedule D, Part 4, column 19.

One important exception to the reporting and valuation rule described above relates to the third source of the net realized capital gains and losses, which is referred to as "other than temporary impairments recognized." In general, an impairment occurs when it is deemed probable that the insurer will not collect all amounts due according to the contractual terms of a debt security at the date of acquisition. Whether or not impairment is temporary is a subjective judgment of the company. Impairments can occur on bonds with any NAIC designation, and they result in the realized capital losses even though a bond has not been sold, redeemed or disposed.

The total realized capital gain or loss for a year is calculated in the Exhibit of Capital Gains (Losses). Column 1 represents the "Realized Gain (Loss) On Sales or Maturity," which is calculated in Schedule D, Part 4, and shown in column 18 of that exhibit. Column 2 is labeled "Other Realized Adjustments" and includes the foreign exchange gain (loss) on disposal and other than temporary impairments recognized in the first year.

Stocks

Like bonds, investment income from stocks comprises investment income earned and realized capital gains.

Preferred stocks and common stocks are reported on separate lines on the Exhibit of Net Investment Income and the Exhibit of Capital Gains (Losses), and they have separate supporting schedules, Schedule D, Part 2, Section 1 and Section 2, respectively. Disposals of preferred and common stocks are reflected in Schedule D, Part 4.

Investment income for stocks is simply the amount of dividends received during the year plus the change in the accrual for dividends declared but unpaid (dividends are accrued on the ex-dividend date). These dividends are included in Schedule D, Part 2-Section 2, column 11 for stocks owned at year end and in Schedule D, Parts 4 and 5, column 20 for stocks sold during the year.

When either common stocks or preferred stocks are purchased, the actual cost plus any commissions or taxes becomes the initial carrying value. Subsequently, the valuation of preferred stocks and common stocks differ, so each is discussed separately.

Common stocks of unaffiliated companies listed on the major U.S. exchanges (NYSE and NASDAQ) are recorded at fair value. Changes to fair value after purchase are recorded as unrealized valuation increases (decreases) in Schedule D, Part 2, Section 2, column 13. When a stock (common or preferred) is disposed of, the difference between the consideration

received and the original cost is recorded as a realized gain (loss) on disposal and a foreign exchange gain (loss) on disposal (if applicable) in Schedule D, Part 4, columns 17 and 18.

The rules governing the accounting for investments in subsidiaries, controlled and affiliated entities are complex and beyond the scope of this publication. A brief description of the accounting for investments in insurance company affiliates is discussed in the RBC chapter of this publication (see Chapter 19. Risk-Based Capital), where accounting background is needed on the accounting for determination of the asset risk charge.

The valuation of preferred stock of unaffiliated entities is dictated by the form of the instrument and the designation assigned by the NAIC Securities Valuation Office. The two common forms of preferred stock are redeemable and perpetual (i.e., non-redeemable) preferred stock. Redeemable preferred stock, also known as callable preferred stock, is preferred stock that is redeemable at the option of the issuer at a specified maturity date or after a specific period of notice, for a preset price. Perpetual preferred stock is preferred stock with no maturity date that cannot be redeemed by the issuer. For redeemable preferred stock, the highest two designation categories are recorded at the original purchase price (i.e., cost) plus brokerage and other related fees, with any discount or premium amortized over the life of the redeemable preferred stock; for perpetual preferred stock, the highest two designation categories are recorded at fair value; for redeemable and perpetual preferred stock, the lower four designation categories are recorded at the lower of cost, amortized cost or fair value.

As with fair value changes, market value changes to common and preferred stock after purchase are also shown in Schedule D, Part 2, Section 2, column 13 as unrealized valuation increases (decreases). Again, when a stock is disposed of, the difference between the consideration received and the original cost is recorded in Schedule D, Part 4, columns 17 and 18 as a realized gain (loss) on disposal and a foreign exchange gain (loss) on disposal (if applicable).

Both common stocks and preferred stocks are subject to impairment charges if there is a decline in fair value that is deemed to be “other than temporary” by the company. This determination must be made by the company based on available information (e.g., published reports, bankruptcy notifications). When impairment is made, it is recorded in Schedule D, Part 2, Section 1, column 17 and Schedule D, Part 2, Section 2, column 14 (as well as Part 4 for stocks that are disposed of during the year). Impairments made in a given year are included in the “Other Realized Adjustments” of the Exhibit of Capital Gains.

Each component of investment income from stocks is included in the Exhibit of Net Investment Income (page 12). Dividends received plus the change in dividends declared but unpaid are shown in the Exhibit of Net Investment income. In the Exhibit of Capital Gains (Losses), the realized gain or loss on disposal is shown in column 1, and the realized foreign

exchange gain (loss) on disposal and other than temporary impairments are shown in column 2.

Cash, Cash Equivalents and Short-Term Investments

This class includes assets that are immediately convertible to cash and have an original maturity of one year or less. Short-term investments are reported in Schedule DA, Part 1, cash is reported in Schedule E, Part 1, and cash equivalents are reported in Schedule E, Part 2.

The short-term investments presented in Schedule DA, Part 1 are composed of bonds or other securities with a maturity of one year or less (at acquisition) and follow the same reporting and valuation rules as long-term bonds. When a short-term bond or other investment is purchased, the security is recorded at cost and the premium or discount (if any) is amortized or accreted until maturity. Other than temporary impairments are also possible, though they are less common given the short duration of these investments.

The reporting and valuation of cash and cash equivalents is similar but relatively simpler than short-term investments, as evidenced by the fewer columns that are included in Schedule E, Parts 1 and 2 relative to Schedule DA.

Derivatives

Derivatives are financial contracts between two parties for which the value depends on the performance of other assets or variables. While derivatives are not a major asset class for most property/casualty insurance companies, they are becoming more common, and they are of heightened importance due to the financial crisis that occurred in the late 2000s. During the financial crisis, one large insurance group nearly collapsed due to derivatives that had been sold by one of its units.

A list of outstanding derivatives owned, sold (“written”), and terminated during the year is provided in Schedule DB. Companies that are not involved in any open derivatives may omit Schedule DB.

Schedule DB provides the number of contracts for each derivative and the notional amount, which represents the number of units of the underlying asset that are involved. The original trade date and the maturity or expiration date are also provided. The two prices listed are the transaction price, which is the price that the company agreed to buy or sell at, and the reporting date price, which is the current price.

One common reason a company may buy or sell derivatives is to hedge, or offset, the exposure they have to changes in price for an underlying asset or variable, such as an interest rate. For this reason, Schedule DB includes information on the item that is hedged with each derivative position and on the type of risk being hedged.

If a derivative position is held for hedging purposes and a company can demonstrate that the hedge has sufficiently reduced the risk related to the specific underlying asset or assets (known as a "highly effective" hedge), then that derivative may qualify for hedge accounting. Under hedge accounting, the derivative is accounted for in the same way as the asset that is hedged, which allows for any changes in the value of the hedged asset and the derivative to offset (or be unrecorded in cases where the hedged item is recorded at amortized cost). For instance, if an interest rate swap is held to specifically hedge the value of a bond portfolio and that interest rate swap qualifies as a highly effective hedge (i.e., effectively neutralizes any changes in the value of the bond portfolio), then that interest rate swap can be accounted for on an amortized cost basis.

If a derivative no longer qualifies for hedge accounting (i.e., is no longer highly effective), then the mark-to-market accounting method should be used, and any changes in the fair value of the derivative should be recorded as unrealized gains (losses) directly to surplus in the current period. The accounting for derivatives used in income-generation transactions depends on the nature of the transaction and the accounting for the covering asset or underlying interest.

Schedule E is also related to derivatives and lists the counterparty exposure for all derivatives that are open at year-end. Counterparty is the person or institution on the other side of a transaction. This is important because it provides information to the regulators and any other users of the financial statements regarding any concentration of exposure to a specific counterparty. If the exposure to a counterparty becomes large enough that it is material relative to the surplus of a company, it should be considered as a potential warning sign.

Derivative accounting is very complex and beyond the scope of this publication. More detail regarding derivative accounting can be found in SSAP 86, Derivatives.

Other Sources of Investment Income

Although we have covered the largest and most common sources of investment income, there are other sources. For additional information on those other sources, or for additional detail regarding any of the sources discussed here, refer to the corresponding statutory accounting guidance.

Investment Guidelines

As discussed, there is a variety of investment asset classes available to insurers, and there is a wide range of specific assets within each class. When purchasing a bond, an insurer needs to make decisions on the type of issuer (e.g., government, corporate, asset-backed), industry, quality, maturity and country. Each company will make these decisions based on a set of investment guidelines, which are governed by state investment laws applicable to insurers. Each state has established investment laws, which provide guidance and limits regarding the

allowable investments for insurers domiciled in their jurisdiction. Although the NAIC has established model laws governing various aspects of insurers' operations (including investments), the laws adopted by individual states may vary from those model laws. For purposes of this discussion, we will focus on the NAIC Model Investment Law.[20] The NAIC Model Investment Law allows for two alternative types of investment guidelines, which are referred to as Defined Limits and Prudent Person.

The Defined Limit system of investment guidelines follows a rule-based approach and prescribes specific quantitative limits for the invested assets that a company may hold. Examples of some of the prescribed limits include the following:

- 5% limit of admitted assets with any single issuer (exceptions for government bonds)
- 1% limit of admitted assets with any single issuer with a designation of NAIC 3
- 0.5% limit of admitted assets with any single issuer with a designation of NAIC 4 or lower
- 20% limit of admitted assets in all securities designated NAIC 3 or lower
- 10% limit of admitted assets in all securities designated NAIC 4 or lower
- 5% limit of admitted assets in all securities designated NAIC 5 or lower
- 1% limit of admitted assets in all securities designated NAIC 6
- 25% limit of admitted assets or 100% of surplus in all common stocks

The Prudent Person system of investment guidelines follows a principles-based approach and requires an insurance company to develop its own investment guidelines. If a company chooses to use the Prudent Person approach, it should develop the investment guidelines with the protection of the policyholder in mind, and it should consider the specific investment expertise and resources available.

Measuring Investment Performance

Although investment income is a critical aspect of an insurer's profitability, it can be difficult to measure investment performance and make comparisons between insurance companies. Several factors to consider are the size of the asset base of a company, the level of risk inherent in a company's investment portfolio and the impact of taxes on a company's investment income. Each of these considerations will be discussed below.

It may be tempting to compare the amount of investment income from one company to another or to create the ratio of investment income to written or earned premium. Neither of these approaches is an accurate measure of investment performance because they ignore the size of a company's invested assets. All things being equal, a company with 10 times the invested assets of another company would also be expected to generate 10 times the

[20] NAIC, Model Laws, Regulations, Guidelines and Other Resources MDL-280, 282, 283, and 340, https://www.naic.org/prod_serv_model_laws.htm2019.

investment income. For that reason, one metric to consider is the ratio of the investment income for the year to the average invested assets.

That ratio will provide a basic comparison between two companies and how much investment income they are generating relative to their invested assets. However, this ratio does not consider the inherent risk to the assets that are being held. If one company has a significantly higher percentage of its assets in common stocks or lower-rated bonds, it would be expected to achieve a higher investment return during a good year, but the level of risk is significantly higher. While there may not be a single ratio or metric that measures this inherent level of risk, it is at least possible to qualitatively compare the types of assets held by two companies to see if there are significant differences.

Measurement and comparison of investment performance is also difficult due to taxes. As discussed earlier in this chapter, net investment income earned is presented on the income statement before the effects of federal income taxes. On the other hand, net realized capital gain (loss) is presented after capital gains tax. Two companies that had the same net investment income earned may be subject to different taxation. The full implications of the impact of taxes on investment income are beyond the scope of this publication, but a user of the financial statements should be aware of this potential difference and seek input from a tax professional as needed.

OTHER INCOME

As shown in the summary of the industry income statement, the other income category is relatively small compared to the other two categories. For that reason, only a few of the significant sources of other income will be discussed below. Although they are not technically considered to be part of other income, dividends to policyholders and federal and foreign income taxes are also discussed below because they are part of the consideration of net income.

Net Gain (Loss) from Agents' or Premium Balances Charged Off (Line 12)

In Chapter 7. Statutory Balance Sheet: A Measure of Solvency, we discussed the assets related to uncollected and deferred agents' balances. If a company determines that a portion of those balances will not be collected, those balances should be charged off as a loss and are recorded as an expense under this category in other income. Conversely, if an agents' balance that was previously written off is recovered, that recovery would be included as a gain in this category. Losses can be used to offset gains that occur during the same period.

Finance and Service Charges not Included in Premiums (Line 13)

Insurers will often offer financing or payment plans to the insured that allow the insured to spread out premium payment over time. Typically, the insured will pay an additional flat service charge to pay through these financing or payment plans. Those service charges are

not recorded as a part of written or earned premium and are instead included in this category under other income.

Aggregate Write-ins for Miscellaneous Income (Line 14)

While the amounts included as miscellaneous write-ins are not usually material, several of the common entries are the following:

- Gain or Loss on Sale of Equipment: When furniture, equipment or automobiles are sold, the sale price may differ from the current depreciated cost. That difference may be recorded as either a gain or a loss under other income.
- Retroactive Reinsurance: An insurer may purchase reinsurance on existing liabilities, and the reinsurance premium paid may be more or less than the previously recorded value of the liabilities transferred. That gain or loss is recorded as other income.
- Gain or Loss on Foreign Exchange: When payments are made or received in a foreign currency, the ultimate settlement of the payment may be at a different exchange rate than the exchange rate at which the payment was originally recorded, and the resulting gain or loss is recorded as other income. This does not include changes in investment income due to foreign exchange, which were already discussed.
- Corporate Expense: Some insurers will record some corporate expenses that are not allocable to underwriting or investments, such as national advertising, to other expenses.
- Fines and Penalties of Regulatory Authorities: As per the Annual Statement Instructions, all fines and penalties imposed by regulatory authorities must be disclosed separately, regardless of materiality.

Dividends to Policyholders (Line 17)

The board of directors of a mutual insurance company may elect to pay a dividend to the policyholders. A dividend is effectively a return of a portion of the premium that was originally paid by the policyholder, and for a dividend to be paid, there are typically state requirements. When the decision is made to pay a dividend, it is considered to have been “declared,” and payment won’t actually be issued until a later date.

This item on the income statement includes dividends that were actually paid plus the change in accrued dividends.

Federal and Foreign Income Taxes Incurred (Line 19)

All foreign and federal income taxes that are incurred during the current year, including amounts related to prior years, are recorded on this line. This amount of income taxes

incurred represents an estimate of the current income taxes incurred during the reporting period and excludes any amounts that would be deferred to later years. Further detail on taxation appears in Chapter 26. Taxation in the U.S.

CHAPTER 9. CAPITAL AND SURPLUS ACCOUNT

In addition to various income items that have already been discussed, the Statement of Income within the Annual Statement also includes a section referred to as the "Capital and Surplus Account." This section is important because it reflects certain changes in surplus that are not recorded in the income statement and it reconciles the beginning surplus to the ending surplus for the reporting period.

In its simplest form, the key components of the Capital and Surplus Account are listed in Table 5 as follows:

Current Year Surplus (line 39) =
- Prior Year Surplus (line 21)
- \+ Current Year's Net Income (line 22)
- \+ Other Surplus Changes (lines 24 through 31)
- \+ Additional Capital Contributions (lines 32 and 33)
- \+ Stockholder Dividends (line 35)[21]

Under Statutory Accounting Principles, certain transactions are recorded directly to surplus, so the Other Surplus Changes component includes a number of important subcomponents. Table 5 is an excerpt of the Capital and Surplus Account for the U.S. property/casualty insurance industry as of December 31, 2018.[22]

[21] Stockholder dividends represent a charge to surplus for amounts paid during the year plus the change in the amount of dividends declared but unpaid during the year. These amounts are shown as a negative number in line 35 of the Capital and Surplus Account and therefore added, as a negative number, to calculate current year surplus. Table 5 demonstrates this calculation.

[22] Accessed via a sector-specific information and research firm in the financial information marketplace.

TABLE 5

Statement of Income, Capital and Surplus Account Section: Total
U.S. Property/Casualty Insurance Industry
U.S. 2018 Statutory Financials, NAIC Format (USD in 000s)

Line	Description	Amount
21.	Surplus as of December 31 of prior year	765,448,283
22.	Net income	60,752,655
24.	Change in net unrealized capital gains (losses) less capital gains tax	(45,399,542)
25.	Change in net unrealized foreign exchange capital gain (loss)	(585,099)
26.	Change in net deferred income tax	324,683
27.	Change in nonadmitted assets	(818,259)
28.	Change in provision for reinsurance	139,053
31.	Cumulative effect of changes in accounting principles	58,650
32.	Capital changes	(197,375)
33.	Surplus adjustments	9,197,233
35.	Dividends to stockholders	(32,085,308)
37.	Aggregate write-ins for gains or losses to surplus	235,593
38.	Changes to surplus for the year (lines 22 through 37 and **)	(8,526,468)
39.	Surplus as regards policyholders, December 31 current year	756,921,815

The first item of Table 5, surplus as of December 31 of prior year, is taken directly from the Capital and Surplus Account from the prior year. Net income comes from the Statement of Income. The remaining rows describe the direct adjustments to surplus. An explanation of some of the important adjustments is below.

Change in Unrealized Capital Gains (Losses) (Line 24)

We previously discussed the concept of realized and unrealized capital gains in the discussion of investments and investment income. Capital gains (losses) occur when the carrying value of an asset changes, but those capital gains (losses) are only realized when an asset is either disposed of or impaired.

Recall that in the investment income section of the Statement of Income, realized capital gains (losses) are recorded in income, but unrealized capital gains (losses) are not. Unrealized capital gains (losses) occur when the fair value of investments carried at fair value changes during the reporting period. Because these unrealized capital gains (losses) are reflected in the balance sheet but not in net income, an adjustment to surplus is required to maintain the Admitted Assets – Liabilities = Surplus relationship.

Because the current year's surplus is being calculated with the prior year's surplus as a starting point, the required adjustment is the change in net unrealized capital gains (losses)

relative to the prior year, not the absolute amount of unrealized capital gains for the current year. This amount can be found in column 4 of the Exhibit of Capital Gains (Losses).

Unrealized capital gains (losses) most frequently occur with respect to stock holdings that are held at fair value because any change in the fair value from year to year affects capital gains (losses). Bonds may also produce unrealized capital gains, but this would typically only occur when a bond is designated as National Association of Insurance Commissioners (NAIC) 3 or lower and is therefore recorded at fair value. Perpetual preferred stock and redeemable preferred stock that is designated in the four lowest NAIC categories could also produce unrealized gains since they also may be recorded at fair value.

Change in Net Unrealized Foreign Exchange Capital Gains (Losses) (Line 25)

This item is similar to the change in unrealized capital gains (losses), but it is specifically related to unrealized capital gains (losses) due to changes in the foreign exchange rate. When an asset is purchased in a foreign currency, any subsequent change in value due to changes in foreign exchange rates as long as that asset is held are considered to be unrealized capital gains (losses). This amount can be found in column 5 of the Exhibit of Capital Gains.

Change in Net Deferred Income Tax (Line 26)

Deferred tax assets (DTAs) and deferred tax liabilities (DTLs) were already discussed in the previous discussion of the balance sheet (Chapter 7. Statutory Balance Sheet: A Measure of Solvency). DTAs and DTLs can arise for a variety of reasons, but the most common are differences in statutory and tax accounting (such as in the discounting of loss reserves, unrealized gains/losses and unrealized foreign exchange gains/losses) and carryforward of previous operating losses to future tax years. DTAs are only considered admitted assets if a strict admissibility test is met. All surplus adjustments are recorded net of deferred taxes if there is a difference in the treatment of the item for statutory accounting and tax purposes. Similar to unrealized capital gains, net DTAs affect the balance sheet but do not flow through to income. As a result, a direct adjustment is required to surplus to maintain the equality of Admitted Assets – Liabilities = Surplus. The change in deferred taxes is determined before consideration of the nonadmitted portion because the change in nonadmitted DTAs is captured with all the other nonadmitted assets.

Change in Nonadmitted Assets (Line 27)

The concept of nonadmitted assets was introduced in the previous discussion of the balance sheet. Nonadmitted assets are assets that are not allowed to be considered part of surplus for the purpose of statutory accounting. This creates a violation of the Admitted Assets – Liabilities = Surplus relationship.

As with the previous items, the adjustment required is based on the change in nonadmitted assets relative to the prior year, not the current absolute amount. There is a specific exhibit in

the Annual Statement, the Exhibit of Nonadmitted Assets (page 13 of the 2018 Annual Statement), which calculates the change in nonadmitted assets relative to last year by asset class and in total. The total change in nonadmitted assets from that exhibit is the source for the amount used as the change in nonadmitted assets in the Capital and Surplus Account.

Change in Provision for Reinsurance (Line 28)

Like nonadmitted assets, the provision for reinsurance is a concept that reduces surplus and is unique to statutory accounting. While nonadmitted assets are essentially treated as assets that are excluded from surplus, the provision for reinsurance is treated as an additional liability on the balance sheet (though no real liability exists). The provision for reinsurance is included on the balance sheet, but it does not flow through to the Statement of Income, which is why a direct adjustment to surplus is required.

The Liabilities page of the balance sheet shows the current year and the prior year provision for reinsurance, so the change in the provision for reinsurance can be calculated from those amounts. The amount of the change in the provision for reinsurance is included in the Capital and Surplus Account.

Cumulative Effect of Changes in Accounting Principles (Line 31)

Sometimes a company must adopt changes in accounting principles, either due to new accounting guidance, or a change in accounting policy. When such a change occurs, a company must determine the cumulative effect of the change (as if the accounting principle had always been in place) as of the beginning of the reporting period the change is made. The cumulative effect of the change is recorded as a direct adjustment to surplus.

Although an entry for a cumulative effect of changes in accounting principles could be required for many reasons, here are two examples:

- Anticipated salvage and subrogation: Companies have the option to record unpaid losses net of anticipated salvage and subrogation. When a company elects to change the recording from gross of salvage and subrogation to net of salvage and subrogation, the cumulative effect of this change should be reported here.
- Tabular discounting: When companies record loss reserves for life pension reserves, they have the option to discount for interest and mortality according to a prescribed actuarial table and interest rate. This is referred to as tabular discounting. When a company makes a change in its use of tabular discounting, the cumulative impact of that change should be recorded here.

Capital Changes and Surplus Adjustments (Lines 32 and 33)

The lines for capital changes and surplus adjustments primarily describe inflows and outflows of capital from the new issuance of stock or return of capital, as well as transfers from surplus to capital when stock dividends are issued. When new stock is issued, the portion of the proceeds related to the par value of that stock is recorded as paid-in capital on line 32.1. The portion of the proceeds in excess of the par value is recorded as paid-in surplus on line 33.1.

Dividends to Stockholders (Line 35)

The board of directors of an insurance company may elect to pay a dividend to the stockholders, which serves as a return on the stockholders' investment. Stockholder dividends may only be paid out of unassigned surplus, which is surplus that is not assigned to the par value or paid in value of stock, special surplus funds, surplus notes or treasury stock. There are also specific state requirements that must be met for a stockholder's dividend to be paid.

The amount shown as dividends to stockholders equals the actual amount paid during the year plus the change in the amount of dividends declared but unpaid during the year.

SUMMARY

This section described the three sources of income on the Statement of Income (underwriting, investment and other) and discussed the Capital and Surplus Account within the Statement of Income, where total change in surplus is determined.

While actuaries are most familiar with the aspects relating to underwriting income, they should also be familiar with investment income, given the significance of investment income to the pricing and profitability of an insurer. Understanding the various items that affect the change in surplus is also important because this not only provides the link between the profitability and the solvency of a company (or the income statement and the balance sheet), but it also highlights several direct adjustments to surplus that may require input from an actuary.

CHAPTER 10. NOTES TO FINANCIAL STATEMENTS

We have now covered the numerical aspects of three of the primary financial statements: the balance sheet, income statement, and statement of capital and surplus. For some of the balances, Statutory Accounting Principles (SAP) requires additional qualitative or quantitative information in order to more fully portray the financial condition of an insurer. The Notes to Financial Statements include some of this additional qualitative and quantitative information.

This publication will focus on specific notes that often require direct involvement by actuaries and the notes that are potentially relevant to actuaries. The notes within each of those two categories are described below:

- Notes often requiring direct involvement by actuaries:
    - Reinsurance (23)
    - Change in incurred loss and loss adjustment expense (LAE) (25)
    - Premium deficiency reserves (30)
    - Discounting of liabilities for unpaid loss and LAE (32)
    - Asbestos/environmental reserves (33)
- Notes that are potentially relevant to actuaries:
    - Summary of significant accounting policies and going concern (1)
    - Events subsequent (22)
    - Intercompany pooling arrangements (26)
    - Structured settlements (27)
    - High deductibles (31)

The numbers listed next to each note above are the numbers corresponding to that note in the 2018 Notes to Financial Statements included in the Annual Statement Blank, which are the same as those in 2011. These numbers may change from year to year due to the addition or subtraction of the notes that are required, so these numbers will not be used in the rest of this discussion. Examples will be drawn from the 2018 Notes to Financial Statements for Fictitious Insurance Company (referred to as the 2018 Fictitious Notes). It is also suggested that the reader review an example of the Notes to Financial Statements from a current insurance company Annual Statement as they review this section.[23]

For each of the notes described, the following information will be provided:

- Information contained in the note
- Importance of the note to actuaries
- Example of information from the 2018 Fictitious Notes

[23] The Notes to the Financial Statements are included only in individual company Annual Statements, not in group Annual Statements.

Readers seeking more detail on any notes listed above or on other notes to financial statements can refer to either the National Association of Insurance Commissioners (NAIC) Annual Statement Instructions or the paper Notes to the NAIC Property/Casualty Annual Statement by Sholom Feldblum and Ralph Blanchard (October 2010).

NOTES OFTEN REQUIRING DIRECT INVOLVEMENT BY ACTUARIES

These five notes typically require direct input from the actuaries at an insurance company, though in each case the management of the company is ultimately responsible (and in some cases the actuary may be a member of management). Because actuaries will likely be the primary source of input in these cases, readers should review these notes in detail and understand what information is needed to complete them.

Reinsurance

The loss and LAE reserve liabilities on the balance sheet and the underwriting income on the income statement are expressed net of reinsurance. Given that reinsurance can significantly lower the loss and LAE reserves on the balance sheet and affect the level of surplus, disclosures regarding the reinsurance in place are important to assessing the financial health of a company. Actuaries typically estimate the ceded reserves on reinsurance contracts and are therefore directly involved in the preparation of this note.

In particular, it is important to understand the potential credit risk associated with the assumed reinsurance recoverables (the risk that the reinsurer will not pay). This note provides information on specific liabilities for which the credit risk may be heightened, such as unsecured recoverables, recoverables in dispute and recoverables that have been deemed uncollectible.

In addition to the assessment of credit risk, there are also some specific accounting rules related to reinsurance that require additional disclosure. The note includes several of these matters, namely the commutation of ceded reinsurance, retroactive reinsurance, reinsurance accounted for as a deposit and run-off agreements.

There are nine sections of this note labeled A through I. A brief summary is provided on each of these sections:

- Unsecured Reinsurance Recoverables (Section A): The credit risk related to recoverables with a specific reinsurer is often mitigated by the reinsured having access to a letter of credit, trust agreement or funds withheld. This note discloses reinsurers for which no such security exists, but only in cases where the recoverable from that reinsurer exceeds 3% of the reporting entity's (i.e., the reinsured's) policyholder surplus. The mention of a reinsurer in this note is not necessarily a problem because those reinsurers may be highly rated and financially sound. The

amounts shown for each include paid losses billed but not yet collected, ceded reserves and ceded unearned premium.

- Reinsurance Recoverables in Dispute (Section B): Even when a recoverable is secured, it is possible for a reinsurer to dispute (or refuse to pay) a recoverable. A reinsurer may dispute either because they are unwilling to pay due to a disagreement on the coverage or amount or because they are unable to pay due to insolvency. A recoverable is considered to be in dispute once a formal written refusal to pay is received from the reinsurer. In addition to identifying a credit risk, recoverables in dispute might represent attempts by a financially troubled insurer to over-recover from reinsurers.

- Reinsurance Assumed and Ceded (Section C): Although unclear from the vague naming, this section includes information on ceding commissions to reinsurers related to the ceded unearned premium reserve. These ceding commissions received from reinsurers are treated as revenue by the insurer and therefore benefit the insurers' surplus position. This section helps regulators to identify situations where an insurer may be abusing ceding commissions to artificially enhance its surplus position, and it provides information on ceding commissions that would need to be returned in the event of cancellation. Specific disclosure is also required for contingent ceding commissions.

- Uncollectible Reinsurance (Section D): If an insurer deems that it is unlikely to collect a specific reinsurance recoverable, it must write off that recoverable as uncollectible and treat it as an expense. This section of the note includes a description of any recoverables that were written off as uncollectible during the course of the year. The disclosures in this note may help an actuary or other user of the financial statements to assess provisions set aside for future uncollectible reinsurance, which is reflected in the Provision for Reinsurance derived in Schedule F.

- Commutation of Ceded Reinsurance (Section E): A commutation is a "transaction which results in the complete and final settlement and discharge of all, or the commuted portion thereof, present and future obligations between the parties arising out of a reinsurance agreement."[24] This note requires disclosure of any commutations that occurred during the year. This information is important to a user of the financial statements because a commutation may cause a distortion to the income statement and balance sheet because the commutation payment received from the reinsurer may be reflected as a negative paid loss and the net loss reserves may increase to reflect the elimination of the reinsurance.

[24] SSAP 62R.

- Retroactive Reinsurance (Section F): Retroactive reinsurance refers to reinsurance that is purchased for liabilities that occurred prior to the effective date of the reinsurance contract. Retroactive reinsurance must be accounted for differently than normal prospective reinsurance to avoid distortion of the balance sheet and income statement. Instead of reducing the net loss reserves, retroactive reinsurance reserves are recorded separately as a write-in item on the balance sheet with any gain recorded in the income statement and as a restricted special surplus amount. This section of the note includes disclosure of any retroactive reinsurance, including reserves transferred, consideration paid or received, paid losses reimbursed or recovered, special surplus generated, and other reinsurers involved in the transaction. This section allows a user of the financial statements to verify that retroactive reinsurance is being accurately accounted for and to understand its impact on the financial statements.

- Reinsurance Accounted for as a Deposit (Section G): To be accounted for as reinsurance, a reinsurance contract must meet certain risk transfer criteria. When a reinsurance contract does not qualify for reinsurance accounting, it must be accounted for as a deposit. This means that it is directly accounted for as a deposit asset or liability (depending on if amounts are owed from or to, respectively, other parties under the contract), instead of flowing through underwriting income. If a company has any reinsurance contracts that are accounted for as deposits, a schedule showing the historical changes to the balance since inception of each contract is included.

- Disclosures for the Transfer of Property and Casualty Run-off Agreements (Section H): Run-off agreements are reinsurance agreements intended to transfer the risks and benefits of a specific line of business or market segment that is no longer actively marketed by the transferring insurer to a third party. This third party is often another insurance or reinsurance company. If certain criteria are met, a run-off agreement can be accounted for differently than is typically required for retroactive reinsurance. If these criteria are met, the transferring entity records the consideration paid to the assuming entity as a paid loss. If the consideration paid by the transferring entity is less than the loss reserves transferred, the difference is recorded by the ceding entity as a decrease in losses incurred. As noted above, retroactive reinsurance that is not considered a run-off agreement is recorded as a separate item on the balance sheet with no reduction in incurred losses at the time of the transaction.

- Certified Reinsurer Rating Downgraded or Status Subject to Revocation (Section I): A certified reinsurer is an assuming insurer that has been certified as a reinsurer in the domiciliary state of the ceding insurer and secures its obligations in accordance with the requirements of Appendix A-785, Credit for Reinsurance of the NAIC Accounting Practices and Procedures Manual. Certified reinsurers that have their ratings reduced

or their certified status revoked by the ceding company's state of domicile may have to provide increased collateral. This footnote requires disclosure of the impact on any reporting period in which a certified reinsurer's rating has been downgraded or its certified reinsurer status is subject to revocation and additional collateral has not been received as of the filing date.

In summary, this note is helpful to an actuary or other user of the financial statements because it identifies potential credit risks (Sections A, B, D and I) and identifies types of reinsurance that are subject to specific accounting treatment (Sections C, E, F, G and H). For the sections related to credit risk (A, B, D and I), the user of the financial statements may ask the following kinds of questions if material balances exist:

- Section A (Unsecured Recoverables): Why wasn't security provided? Are there concerns of the financial health of either the reinsurer or the reinsured? Was there a catastrophe that led to a large amount of recoverables? Are all of these unsecured recoverables concentrated with one reinsurer?

- Section B (Recoverables in Dispute): What is the point of disagreement with the reinsurer? Is the amount in dispute material to either the reinsured or the reinsurer? Are there legal opinions available on the validity of each side's claim?

- Section D (Uncollectible Reinsurance): What was the reason for the uncollectible reinsurance? Could other outstanding recoverables also be uncollectible in the future for the same or similar reasons? How long did it take the company to write off any uncollectible reinsurance that was disclosed?

- Section I (Certified Reinsurer Rating Downgraded or Status Subject to Revocation): What was the reason for the downgrade or revocation? Why wasn't the additional collateral provided as of the filing date?

The disclosures in this note are of specific interest to an actuary who is opining on a company's loss reserves because several of these items are referred to explicitly in the Statement of Actuarial Opinion (SAO).

A review of the 2018 Fictitious Notes indicates that Fictitious provided disclosures related to unsecured reinsurance, commissions and retroactive reinsurance. The other items were not applicable for the 2018 year.

Change in Incurred Loss and Loss Adjustment Expense

The total incurred loss and LAE for a year can be thought of in two categories: (1) loss and LAE that were incurred on liabilities occurring during the current accident year and (2) any changes in incurred loss and LAE from previous accident years. This note relates only to the

second of these two items. The content of this note should include the amount of the change (i.e., reserve strengthening or weakening) in liabilities for previous accident years, the segments or lines of business that led to that change, and the reason for the change.

The importance of this note to the financial health of an insurance company is two-fold. First, the existence of a material change in prior accident years' incurred losses and LAE affects the current year's underwriting income and could obscure the true underlying experience of the current in-force business. A company that achieved positive underwriting income solely as a result of decreases to prior years' loss and LAE estimates may have profitability issues on their current business.

Second, recurring material changes in prior accident year incurred loss and LAE may be indicative of a bias or problem with a company's reserving process. For instance, if a company consistently experiences significant decreases in their estimates of prior accident years' losses, then there may be inherent conservatism to the company's process for establishing loss and LAE reserves. Schedule P provides additional information that may assist in this assessment, and it will be discussed in more detail in Chapter 15. Schedule P.

Actuaries should be familiar with the required content of this note so that they are prepared to provide input to management. Also, when reviewing a company's financial statements, actuaries may be in the best position to identify one of the two problems noted above. This note should be consistent with information included in a similar note to the annual Generally Accepted Accounting Principles financial statements and also to the one-year development column from Schedule P, Part 2 (with the exception of Adjusting & Other Loss Adjustment Expenses, which are included in this note but not in Schedule P, Part 2).

Finally, if the actuary is the Appointed Actuary for the company, the actuary may be called on to understand the difference in estimates underlying the loss reserves since the prior year's estimates and comment on those changes in the Appointed Actuary's Statement of Actuarial Opinion. For that reason, the actuary needs to be aware of the content of this note.

In the case of the 2018 Fictitious Notes, it is disclosed that the prior year-end total loss and LAE reserves developed favorably by $875,000, and several specific segments were cited as the major drivers of this favorable development. According to Fictitious' income statement, the company's net income in 2018 was $2.2 million. This tells the user of the financial statements that the favorable reserve development was a significant factor in the financial results of the company for the year. Chapter 12. Five-Year Historical Data Exhibit will provide guidance on how to assess whether this favorable development has been occurring consistently over time.

Premium Deficiency Reserves

Premium deficiency reserves must be recorded when the unearned premium of in-force business is not sufficient to cover the losses, LAE and maintenance expenses that will arise as that premium is earned. Companies have the option to consider investment income when performing this calculation. Also, before performing the calculation, the business should be grouped in a manner that is consistent with how it is marketed, serviced and measured.

Most insurance policies sold by insurance companies are priced with rates that are greater than the expected losses and expenses, especially after consideration of investment income. Furthermore, if there is a segment of the business that is underpriced, it may be a part of a larger grouping where the deficiency in that segment is offset by other more profitable segments. For these reasons, the premium deficiency reserve will be zero for a majority of companies. However, there are cases where a non-zero premium deficiency reserve exists due to regulatory, competitive or other conditions that led to inadequate rates.

When a non-zero premium deficiency reserve does exist, a company may record it as either a write-in liability or a part of the unearned premium reserve on the balance sheet. When it is recorded as a part of the total unearned premium reserve liability, the Notes to Financial Statements is the only way to identify whether a premium deficiency reserve exists and the amount of the reserve.

In the note relating to premium deficiency reserves, the company must disclose the amount of the premium deficiency reserve. The company also needs to disclose whether investment income was considered in the determination of the premium deficiency reserve (although this is often disclosed in the accounting policy note).

This note is relevant to users of the financial statements because the existence of a premium deficiency reserve is usually a clear indication that issues of rate adequacy exist for at least the affected segment. However, the absence of a non-zero premium deficiency reserve does not necessarily indicate that rates for all business segments are adequate, due to the ability to consider investment income and to group segments into broad categories.

As a result of actuaries' involvement in the pricing and reserving of business, actuaries are in a position to provide input on whether a premium deficiency reserve is necessary and on the amount of the premium deficiency reserve. The analytical approach for this is beyond the scope of this publication, but there are other resources available that provide direction.

In the 2018 Fictitious Notes, the note on premium deficiency reserves indicates that at December 31, 2018, the company had liabilities of $0 related to premium deficiency reserves, and anticipated investment income was considered in that determination. If an insurer were to elect to change its consideration of investment income from one year to the next for the purposes of calculating the premium deficiency reserve, that change would likely

need to be disclosed, along with the amount of the impact, in the Note called "Accounting Changes and Correction of Errors."

Discounting of Liabilities for Unpaid Loss and Loss Adjustment Expenses

This note indicates whether a company discounts loss reserves, and if so, it also describes the basis for calculating the amount of the discount. There are two types of discounting that need to be disclosed: tabular discounting and non-tabular discounting.

Tabular discounting applies specifically to outstanding annuity-type claims that pay pension benefits. These claims arise most commonly from workers' compensation coverage but may also arise from other types of liability coverage. A tabular discount reflects mortality assumptions according to a specific life table and a defined interest rate. Both the life table and the interest rates may be specified by the state regulator. Not all insurance companies that have these eligible liabilities choose to utilize tabular discounts.

In the first part of this note, the company needs to indicate whether any liabilities are discounted using tabular discounting. If any tabular discounting is used, the company also needs to indicate the basis and assumptions used in calculating the tabular discount. For instance, in the 2018 Fictitious Notes, the company disclosed that tabular workers' compensation case reserves were discounted under various state laws, reflected a discount rate of 3.5% or a rate prescribed by the state regulator, and were derived based on a defined set of U.S. life tables.

In the second part of this note, any non-tabular discounting needs to be disclosed and described. This should reconcile to the amount of the non-tabular discount that was disclosed in Schedule P, Part 1, columns 32 and 33. Non-tabular discounting is less common than tabular discounting and is typically only done in specific cases where a company has been permitted by its state regulator to discount a specific type of liability. Two lines of business most commonly used for non-tabular discounting are workers' compensation and medical professional liability.

While tabular discounts are calculated for specific pension claims, non-tabular discounts are typically calculated on the aggregate amount of a specific segment of reserves by using a projected payment pattern and an assumed discount rate. If a company applies any non-tabular discounting, they must disclose that and describe the basis in this note. We can see from the 2018 Fictitious Notes that the company did not apply non-tabular discounting.

The note also requires a company to disclose whether any of the key assumptions used to discount loss reserves (whether for tabular or non-tabular discounting) have changed relative to the prior year.

It is important for actuaries and other users of the financial statement to be familiar with this note because different companies have different discounting policies, and those differences

must be considered to make a consistent comparison. Non-tabular discounts may be of particular interest because they usually exist due to a specific exception granted by the regulator, which may relate to the solvency of an insurer. Furthermore, an actuary that is opining on the loss reserves of a company must disclose and describe any discounting of loss reserves in the SAO.

Asbestos/Environmental Reserves

Asbestos and environmental liability reserves have developed adversely over the past several decades. Therefore, exposure to asbestos or environmental liabilities can represent a significant source of uncertainty in a company's loss and LAE reserves. Furthermore, asbestos and environmental liabilities have consistently developed adversely over the past several decades. For these reasons, specific qualitative and quantitative disclosure is required regarding a company's asbestos and environmental reserves.

This note requires a company to disclose whether it has identified a potential exposure to asbestos or environmental reserves. These disclosures specifically exclude exposures relating to policies that were issued specifically to cover asbestos and environmental exposure. If the company answers affirmatively for either asbestos or environmental exposures, it must disclose the lines of business affected, the nature of the exposures and the reserving methodology used to estimate the liability. In addition to those qualitative disclosures, the company must complete a table that provides the following information for each of the past five years:

- Beginning reserves (including case, bulk + IBNR Loss & LAE)
- Incurred loss and LAE
- Calendar year payments for losses and LAE
- Ending reserves (including case, bulk + IBNR Loss & LAE)

This information must be provided separately for asbestos and environmental reserves on a direct, assumed and net of reinsurance basis. The company must also disclose the amount of the reserves that relate to unreported claims (i.e., pure incurred but not reported (IBNR)).

This note is important to the users of the financial statements because it discloses the existence of asbestos and environmental exposure, the magnitude of that exposure and the recent development of that exposure. In cases where these liabilities are material relative to a company's overall reserves and/or have consistently been developing adversely, it should serve as a potential warning sign to the financial health of the company.

Actuaries at insurance companies are often directly involved in the estimation, monitoring and reporting of asbestos and environmental reserves. In situations where the financial statements of a company are under financial review, actuaries may also be in the best position to evaluate the disclosures made here for potential impact on the financial health of the company.

In the 2018 Fictitious Notes, the company acknowledged exposure related to asbestos and environmental liabilities. The company then described its process for identifying, monitoring and estimating these exposures.

The excerpt below in Table 6 shows an example of the five-year history of the calendar year incurred and paid asbestos losses and LAE on a net of reinsurance basis for Fictitious. In this case, we see that the net asbestos liability as of December 31, 2018, was $3.28 million. We also see that there was adverse development in Fictitious' asbestos reserves from 2015 through 2018, as evidenced by the incurred losses and LAE each year.

TABLE 6

Net of Ceded Reinsurance – Asbestos	2014	2015	2016	2017	2018
a. Beginning reserves (including Case; Bulk + IBNR Loss & LAE)	$5,450,000	$5,023,000	$3,920,000	$3,709,000	$3,426,000
b. Incurred losses and LAE	–	$49,000	$249,000	$188,000	$236,000
c. Calendar-year payments for losses and LAE	$427,000	$1,153,000	$459,000	$471,000	$382,000
d. Ending reserves (including Case, Bulk + IBNR Loss & LAE)	$5,023,000	$3,919,000	$3,710,000	$3,426,000	$3,280,000

The excerpt below in Table 7 includes the information on the portion of these reserves that relates to unreported claims.

TABLE 7

Ending Loss and LAE Reserves for Unreported Claims Included in Part A Above	
1. Direct basis	$3,116,000
2. Assumed reinsurance basis	$0
3. Net of ceded reinsurance basis	$2,782,000

From Tables 6 and 7 we see that $2.78 million out of the total $3.28 million in asbestos reserves (85%) related to unreported claims. The majority of the liability that is related to unreported claims underscores the high level of uncertainty in these liabilities.

NOTES THAT MAY BE POTENTIALLY RELEVANT TO ACTUARIES

In addition to the five notes described above, there are several other notes that may be potentially relevant to actuaries. Actuaries should be familiar with these notes and their significance, and they may need to review them when they are evaluating the reserves for a company (particularly if they are the opining actuary).

Summary of Significant Accounting Policies and Going Concern

This note describes the accounting rules used to produce the Annual Statement, including:

- The source of the accounting rules (typically the NAIC Accounting Practices and Procedures Manual)
- Any exceptions that were made in applying those rules and the basis for those exceptions, such as an exception that made with specific state approval
- Additional detail on the company's significant accounting policies

Where exceptions are made to the rules in the NAIC Accounting Practices and Procedures Manual, they must be either prescribed or permitted by the domiciliary state. "Prescribed" refers to practices that are required by state law, and "permitted" refers to approval by the state regulator.

An actuary who is evaluating the reserves of a company will want to review this note to identify prescribed or permitted practices or other accounting policies that relate to loss reserves. Any unexpected deviations described in this note should be evaluated for their impact on the reserves and general financial health of the insurance company.

The following provides an excerpt of this note as provided in the 2018 Annual Statement for Fictitious:

> 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND GOING CONCERN
>
> A. Fictitious Insurance Company prepares its statutory financial statements in conformity with accounting practices prescribed or permitted by the state of Florida. The state of Florida requires that insurance companies domiciled in Florida prepare their statutory basis financial statements in accordance with the National Association of Insurance Commissioners (NAIC) Accounting Practices and Procedures Manual, subject to any deviations prescribed or permitted by the Florida Insurance Commissioner. The impact of any permitted accounting practices on policyholder surplus of the Company is not material.

As shown in this excerpt, the company prepared its statutory financial statements in conformity with the practices prescribed or permitted by the State of Florida and with the NAIC Accounting Practices and Procedures Manual, subject to deviations prescribed or permitted by the Florida Insurance Commissioner. Further, the note indicates that the impact of any permitted practices on policyholder surplus was not material.

Events Subsequent

Subsequent events are broadly defined as events that occur between the date of the financial statements (for instance, December 31) and the date that the financial statements are issued

(for instance, March 1). Within the broad category of subsequent events, there are also two specific types that should be defined:

- Type 1 (Recognized Subsequent Events) subsequent events provide "additional evidence with respect to conditions that existed as of the date of the Balance Sheet." An example of this type of information would be if updated information was received on a large claim on January 15, when that claim had already been reported and known of prior to December 31, and the company deemed that insufficient IBNR was carried to cover the additional needed reserve.
- Type 2 (Nonrecognized Subsequent Events) subsequent events provide "evidence with respect to conditions that did not exist at the time of the Balance Sheet." An example of a Type 2 subsequent event would be if a new large claim occurred on January 15 and was not previously known.

Type 1 subsequent events should already be reflected in the recorded amounts of the financial statements because the financial statements should reflect all information that is known up until the day that the financial statements are issued relating to the conditions that existed as of the accounting date. Disclosure is not needed unless it is "necessary to keep the financial statements from being misleading." For example, if the booked reserves could not be adjusted in time to incorporate the revised reserve amount necessary to reflect the Type 1 event, this note would disclose the amount by which the reserves need to be adjusted. Note that changes that are made to reserves due to their normal continual review are not considered Type 1 events.

Type 2 subsequent events are not already, and should not be, reflected in the financial statement. However, they should be described in this note if they "may have a material effect on the financial condition of the company." The guidance says "may have," which means that even if a company has determined that the impact is not material, it should still be disclosed as long as it "may have" a material impact. Type 2 subsequent event disclosure, of course, requires use of management's judgment.

An actuary or other user of the financial statement may consider reviewing this note to verify whether there are any material subsequent events that are not reflected in the financial statements. This is of specific importance to an actuary that is opining on a company's loss reserves because the opining actuary will need to determine whether a subsequent event is material to the estimate of the loss reserves and whether that subsequent event should be considered.

Review of the 2018 Fictitious Notes indicates that no subsequent events were disclosed.

Intercompany Pooling Arrangements

Intercompany pooling is a common arrangement among companies in a group in which each of the participants fully cedes all of its business to the pool leader, and then each participant assumes back a specific percentage of the total.

In these situations, it is important for a regulator or any other user of the financial statements to understand the pooling arrangement to assess the solvency of the group as a whole. This note discloses the existence of the pooling arrangement and also describes the cessions and assumptions that occur. Typically, this includes identification of each company in the group, the lead company and the pooling percentages for each participant.

In cases where pooling exists, it will affect the various aspects of the Annual Statement in different ways. Some examples include the following:

- The Underwriting and Investment Exhibit will show direct business written by each company and the amounts ceded to the lead company in the pool and the portion of the pool assumed specifically by affiliates.
- Schedule F will show the cessions to the lead company as ceded reinsurance in Part 3 and the assumed business in Part 1.
- Schedule P will show only the pool member's share of the pooled results.

The 2018 Fictitious Notes indicate that this company did not participate in any intercompany pooling.

Structured Settlements

A structured settlement refers to a situation where an insurance company settles a claim by purchasing an annuity on behalf of a claimant. This is most commonly observed on workers' compensation or general liability claims, and the annuity is usually purchased from a life insurance company.

When the annuity is purchased (and the claimant is the payee), it is recorded as a paid loss by the original insurance company, and the claim is considered to be closed. However, if the life insurance company providing the annuity was ever to become insolvent, it is possible that the original insurer could still be liable for the remaining portion of the annuity payments.

The purpose of this note is to disclose the total amount of structured settlement payments for which an insurer could be held liable. Furthermore, if the amount of these remaining payments from a single life insurance company exceeds 1% of surplus, specific disclosure of the amount and the company from which the structured settlement was purchased is required.

This note is relevant to users of the financial statements because it describes a potential liability, or credit risk, that is not reflected on the balance sheet. The identification of life insurers that provide coverage for remaining payments exceeding 1% of surplus allows for further review of their financial condition to identify any significant issues.

Review of this note in the 2018 Fictitious Notes indicates that in total the company purchased structured settlements with a statement value of $4.3 million.

High Deductibles

High-deductible policies are commercial insurance policies that have a significant deductible, such as $250,000, giving the insured a substantial retention on each claim. Under these high-deductible policies, the insurer pays the full amount of the claim and then seeks reimbursement from the insured for the portion within the deductible. These types of policies are most commonly seen in workers' compensation but also may be used for liability business. Similar to the situation with structured settlements, these policies can present a credit risk to the insurer that is not apparent in the financial statements. For unpaid claims, the portion of the unpaid amount within the deductible is not included within the insurance company's booked loss reserve in the Annual Statement. The treatment for both paid and unpaid deductible losses creates a credit risk for the insurer due to the possibility that the insured will not reimburse them for the deductible portion of the loss.

This note requires disclosure of the following:

- The amount of reserve credit (i.e., the amount of case reserves established for the deductible portion of a loss) recorded by the company for unpaid claims.
- The amount of billed but not yet collected deductible reimbursements for paid claims.

To understand the potential impact of this credit risk, an actuary or other user of the financial statements who is reviewing the financial health of a company can consider the total amount of credit risk relative to the total unpaid claims and to the company's surplus.

As noted in the Notes to Financial Statements for Fictitious, Fictitious does not issue any policies with high deductible plans.

SUMMARY

Notes to financial statements provide additional qualitative and quantitative disclosure to support the numerical information provided in the statutory financial statements. The Notes provide additional detail to assist the user of the financial statement in understanding the numerical exhibits and provide a source of publicly available information on off-balance sheet items.

CHAPTER 11. GENERAL INTERROGATORIES

In the previous chapter we discussed the Notes to Financial Statements. These notes provide additional information at the end of the financial statements in the interest of full disclosure of a company's financial condition. The notes address accounting policy and provide explanatory data and supplemental information to the financial statements. They assist the reader in interpreting some of the more complex items within a company's financial statements by expanding upon and adding clarity to specific items contained in the balance sheet and income statement. In contrast, the General Interrogatories are a series of questions within the statutory Annual Statement to which the insurance company is required to respond. The questions are divided into two parts:

- Part 1, Common Interrogatories, provides general questions applicable to life, health and property/casualty insurers.
- Part 2 provides questions that are specific to the type of insurance company (e.g., life, health or property/casualty). In the Property/Casualty Annual Statement, this section is Property & Casualty Interrogatories.

Similar to the Notes to Financial Statements, the responses provided in the General Interrogatories provide additional clarity to the reader of the Annual Statement but also serve to identify additional areas that warrant closer review by regulatory officials.

COMMON INTERROGATORIES

Part 1 contains of the following subheadings: General, Board of Directors, Financial, Investment and Other. The purpose of each section is to give the reader an understanding of the company's operations, business practices, and the types of internal and external controls in place.

General

The General subsection asks questions pertaining to the following topics:

- Holding company relationships
- Latest regulatory financial examinations
- Excessive sales commission levels
- Merger activity
- Suspension of licenses
- Foreign control
- Exemptions from required regulations
- Whether senior management is subject to a code of ethics

Answers to these questions provide the reader with additional information about the company and its discipline in following the "rules." For example, if a company has suspended licenses or does not comply with recommendations from the latest financial examinations, there may be a lack of internal discipline, and this company would therefore be looked at with further scrutiny by external parties. Likewise, further inquiry may be appropriate if a company reports excessive commission levels, as this might be a sign that the company is conceding on commission to maintain business or achieve growth.

The General subsection also provides the name and address of the independent certified public accountant (CPA) or accounting firm (the auditor) conducting the annual audit and the appointed actuary.

While important to peruse all the interrogatories, knowledge of the auditor, appointed actuary and latest financial exam(s) are of particular relevance to the property/casualty actuary.

Audit firm: The CPA opines as to whether the insurance company's financial statements are free of material misstatement and prepared in accordance with the accounting principles used. The audit firm is responsible for reconciling figures contained in a company's financial statements to detailed underlying balances and confirming amounts due to or from third parties.

It is important for the actuary to be aware of any misstatements in the financial statements or errors in the underlying data relied upon. Further, in accordance with National Association of Insurance Commissioners (NAIC) data testing requirements,[25] a company's independent accountant and appointed actuary are required to communicate so the accountant can determine which data relied upon by the actuary should be subject to audit testing procedures.

Actuary: The name, address and affiliation of the appointed actuary are provided in the General Interrogatories. The appointed actuary is the actuary explicitly appointed by the insurance company's board of directors, or equivalent body, to opine on the loss and loss adjustment expense (LAE) reserves reported in the company's Annual Statement. It is important for the user of the Annual Statement to know who the appointed actuary is; questions pertaining to the Statement of Actuarial Opinion should be addressed to the appointed actuary.

Latest financial examination: The General Interrogatories also provide information regarding the latest financial examination performed by state regulatory officials. The interrogatories include:

- The date of the latest financial exam

[25] 2018 NAIC Annual Statement Instructions Property/Casualty, page 19.

- The date through which financial statements were evaluated
- The release date of the examiner's report
- The name of the department performing the exam
- Whether the insurance company has complied with all adjustments and recommendations from the examination report

Regulatory examination reports are generally available to the public through the state insurance department in which the exam was performed. The examination report will provide the state's findings with respect to the adequacy of the company's loss and LAE reserves.

Board of Directors

The Board of Directors subsection of the Common Interrogatories focuses on the board's role in overseeing the company's operations. In particular, it includes questions regarding the board's approval of the purchase or sale of investments and whether the company has a process in place to notify the board of conflicts of interest within the company's senior management. The company is also asked whether permanent records of board proceedings are retained; this enables tracking and monitoring of the board's oversight role.

Financial

While it is generally assumed that the Annual Statement is prepared in conformity with Statutory Accounting Principles (SAP), the first question within the Financial subsection asks if the statement was prepared using another basis (e.g., Generally Accepted Accounting Principles). The basis of accounting is important for users of the statement and should probably be read first when opening an Annual Statement. If it is assumed that the Annual Statement is prepared in conformity with SAP, but it is prepared using a different accounting basis, then the user may misinterpret individual figures and ultimately a company's financial position.

The questions within the remainder of the Financial subsection pertain to loans made to senior leadership and other stakeholders of the company, assets that the company was obliged to transfer to another party that were not reported as a liability in the statement, assessments other than those to a guaranty fund or guaranty association, and amounts due from affiliates. The purpose is to understand if the company has financial obligations that have not previously been reported in the Annual Statement and/or if the company is providing financial support or a lifeline to stakeholders or affiliates.

Investment

The Investment subsection has the most questions within the General Interrogatories (more than 30). They cover control over assets and investment decisions, security lending programs and associated collateral, hedging programs, mandatorily convertible preferred stocks or

bonds, and compliance with the Purposes and Procedures Manual of the NAIC Securities Valuation Office, among other topics. Here again, the questions pertain to the level of control the company has over its operations and compliance with the rules.

Other

The Other subsection captures information about payments made to trade associations, service organizations, statistical or rating bureaus, attorneys or others in connection with legislative or regulatory matters. Examples of such organizations include the Insurance Services Office and A.M. Best Company. The company is required to list the names of organizations where payment exceeded 25% of the subtotal so that the reader can get an idea of the amount of influence or reliance that the company has on a particular organization, bureau or legislative matter.

PROPERTY & CASUALTY INTERROGATORIES

Part 2 of the General Interrogatories is specific to property/casualty insurers and provides more details about the company's exposures that are not readily determinable based on the quantitative information contained in the schedules and exhibits within the Annual Statement. Many of these questions focus on specific exposures that are not generally dealt with by the property/casualty actuary on a daily basis, such as those pertaining to Medicare supplement insurance, health lines of business or health savings accounts. However, other questions are of major interest to actuaries. For example, certain questions center on the company's exposure to catastrophic events and excessive loss, the process by which probable maximum loss is determined and the level of reinsurance protection afforded to protect the company's net results against catastrophic losses. These questions (requests) include the following:

- "What provision has this reporting entity made to protect itself from an excessive loss in the event of a catastrophe under a workers' compensation contract issued without limit of loss?" [26]
- "Describe the method used to estimate this reporting entity's probable maximum insurance loss, and identify the type of insured exposures comprising that probable maximum loss, the locations of concentrations of those exposures and the external sources (such as consulting firms or computer software models), if any, used in the estimation process." [27]
- "What provision has this reporting entity made (such as a catastrophic reinsurance program) to protect itself from an excessive loss arising from the types and

[26] 2018 Property/Casualty Annual Statement, General Interrogatory 6.1 (Part 2 Property & Casualty Interrogatories).
[27] Ibid., General Interrogatory 6.2 (Part 2 Property & Casualty Interrogatories).

concentrations of insured exposures comprising its probable maximum property insurance loss?" [28]

- "Does the reporting entity carry catastrophe reinsurance protection for at least one reinstatement, in an amount sufficient to cover its estimated probable maximum loss attributable to a single loss event or occurrence?" [29]
- "If no, describe any arrangements or mechanisms employed by the reporting entity to supplement its catastrophe reinsurance program or to hedge its exposure to unreinsured catastrophic loss." [30]

Although the General Interrogatories are not included for Fictitious Insurance Company, the aforementioned questions would be of particular interest to users of Fictitious' Annual Statement in light of the company's catastrophic loss experience in 2018. Review of answers to the above questions in conjunction with the information provided in Schedules F and P about Fictitious' reinsurers and ceded loss ratios would assist the user in evaluating the adequacy of Fictitious' reinsurance protection relative to its catastrophe exposures. Other questions within the Property & Casualty Interrogatories that are of interest include those pertaining to the use of finite reinsurance. Finite reinsurance was a hot topic in the property/casualty insurance industry in 2005 when several large insurance companies were fined by the Securities and Exchange Commission for accounting for finite reinsurance deals in a way to bolster their financial position.

In its simplest form, finite reinsurance does not transfer underwriting risk; rather it is a play on interest. Assume an insurance company knows it will have to pay a fixed amount in losses, say $10 million, in two years. Under a finite reinsurance deal, the insurance company could take the present value of $10 million and give it to a reinsurance company as "premium," in exchange for an agreement that the reinsurer pay the $10 million in losses two years from now. The amount the reinsurer will have to pay is fixed ($10 million), and the time the reinsurer will have to pay the losses is fixed (two years); there is no underwriting or timing risk involved in the transaction.

Using a simplified example, assuming a 5% rate of interest, if the insurance company were to account for this contract as reinsurance, its balance sheet would show a reduction of approximately $9 million in cash for premium paid (the present value of $10 million at 5% interest per year for two years) in return for a corresponding reduction of $10 million in loss reserves, resulting in a net increase to surplus of approximately $1 million. However, since there is no underwriting or timing risk, this is more akin to a deposit, such as one with a bank, and this is how such contracts must be accounted for. There is no surplus relief as a result of this contract; the insurer still has to pay $10 million in two years.

[28] Ibid., General Interrogatory 6.3 (Part 2 Property & Casualty Interrogatories).
[29] Ibid., General Interrogatory 6.4 (Part 2 Property & Casualty Interrogatories).
[30] Ibid., General Interrogatory 6.5 (Part 2 Property & Casualty Interrogatories).

Several high-profile insurance companies engaged in finite reinsurance arrangements in the early 2000s to boost their financial results through improper accounting. This behavior prompted the NAIC to adopt additional disclosure requirements, including an expansion of the Property & Casualty Interrogatories. One such interrogatory requires insurers to answer affirmatively if they ceded reinsurance that:

1. Resulted in underwriting gain (or loss) of more than 5% of prior year surplus or ceded premiums or loss and LAE reserves of more than 5% of surplus.
2. Was accounted for as reinsurance rather than as a deposit.
3. Had one or more of the following features ("or other features that would have similar results"[31]):
    a. Duration of at least two years and is non-cancelable during the term.
    b. Limited cancellation provisions such that the ceding company is required to enter into a new contract with the same reinsurer or its affiliate.
    c. Aggregate stop loss coverage.
    d. The right by either party to commute, unless triggered by a downgrade in the credit rating of the other party.
    e. The ability to report or pay losses less frequently than quarterly.
    f. Delayed timing of reimbursement to the ceding company.[32]

A following interrogatory requires insurers to answer affirmatively if they have entered any ceded reinsurance contracts where ceded premium is 50% or more than the insurer's gross written premium, or 25% or more of the ceded written premium is retroceded to the insurer. Reinsurance ceded to entities other than captives under the insurer's control or approved pooling arrangements is excluded from this interrogatory.[33]

If either interrogatory is answered affirmatively by the insurance company, the insurer is required to file the Reinsurance Summary Supplemental Filing to the Annual Statement. This filing is due on March 1. Within this filing the insurer is required to disclose:

1. The financial impact on the balance sheet and statement of income if such contracts were excluded (i.e., the restatement of assets, liabilities, surplus and net income gross of the reinsurance contract(s)).
2. A summary of the applicable terms of the contract(s) that triggered the affirmative response.
3. The reasons management entered into the contract, including the expected financial gain.[34]

[31] Ibid., General Interrogatory 9.1 (Part 2 Property & Casualty Interrogatories).
[32] Ibid., General Interrogatory 9.1 (Part 2 Property & Casualty Interrogatories).
[33] Ibid., General Interrogatory 9.2 (Part 2 Property & Casualty Interrogatories).
[34] 2018 NAIC Annual Statement Instructions Property/Casualty, page 440.

The intent of these additional interrogatories and the supplemental filing is to identify those contracts that may be accounted for improperly and therefore warrant further review by regulatory officials. Knowledge of such contracts is relevant to the actuary as the accounting treatment may impact the actuary's evaluation of unpaid claims. If a ceded contract is accounted for as reinsurance, it will serve to reduce the unpaid claim liabilities; if accounted for as a deposit, it will not.

Examples of other items addressed within the Property & Casualty Interrogatories that tend to be a focus of the actuary include:

- Whether there are specific limiting provisions within reinsurance contracts, guaranteed policies and retrospectively rated policies, as these features may affect the actuary's evaluation of unpaid claims.[35]
- Any releases of liability under reinsured policies, such that the company could reassume liability and potentially have its surplus position weakened as a result.[36]
- Exposure to warranty business, whereby the adequacy of the unearned premium reserve would be the focus of attention as the contract terms, and therefore exposure, tends to continue beyond 12 months.[37]

[35] 2018 Property/Casualty Annual Statement, General Interrogatory 7.1 (Part 2 Property & Casualty Interrogatories).
[36] Ibid., General Interrogatory 8.1 (Part 2 Property & Casualty Interrogatories).
[37] Ibid., General Interrogatory 16.1 (Part 2 Property & Casualty Interrogatories).

CHAPTER 12. FIVE-YEAR HISTORICAL DATA EXHIBIT

OVERVIEW

Most other exhibits and schedules within the Annual Statement provide only one or two years of financial data for a company. The Five-Year Historical Data exhibit is valuable because it provides a summarization of key financial figures and statistics from historical Annual Statements going back five years: the current and prior four. Key line items from the balance sheet and income statement are included. Also included are operating ratios and ratios showing one- and two-year development in loss reserves relative to policyholders' surplus. This compilation facilitates the identification of trends when evaluating the health of a property/casualty insurance company.

Following is a brief overview of content that actuaries tend to focus on within this exhibit, with illustrations using data from Fictitious' 2018 Annual Statement where deemed relevant.

WRITTEN PREMIUM

The first page of the Five-Year Historical Data exhibit begins with the insurance company's revenue. For an insurance company, revenue is in the form of written premium. Gross and net written premium information is provided. Gross and net amounts are summarized into the following five lines of business categories:

1. Liability
2. Property
3. Property and liability combined
4. All other
5. Non-proportional reinsurance

A sixth line contains the totals.

This information shows how the company's premium volume, use of reinsurance and business mix have changed over time. Things to look out for when assessing the health of an insurance company include rapid growth or decline in revenue, increases or decreases in the use of reinsurance protection, and changes in business mix toward riskier or unprofitable lines. Observations such as these would prompt additional inquiry through review of other schedules, exhibits and notes within the Annual Statement and a meeting with company management. For example, if a company significantly increased its use of ceded reinsurance, we would want to understand the quality of the reinsurance. The Notes to Financial Statements and Schedule F provide additional information on the company's reinsurers.

Total gross and net written premium figures from Fictitious' Five-Year Historical Data exhibit are displayed in Table 8.

TABLE 8

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
	2018	2017	2016	2015	2014
6. Gross premiums written	28,634,000	28,085,000	29,519,000	31,238,000	31,670,000
	2%	-5%	-6%	-1%	
12. Net premiums written	26,752,000	25,936,000	25,521,000	25,583,000	25,363,000
	3%	2%	0%	1%	
Net/gross ratio	93%	92%	86%	82%	80%

Fictitious experienced an approximate 5% decline in gross writings in 2016 and 2017. This could have been attributed to many things, including a decrease in concentration in a certain line of business or risk class, the continued softening of the market observed over this time period or a decrease in the amount of coverage purchased. Gross written premiums increased by 2% in 2018, which again could have been a function of the economy or insurance prices starting to rebound or both.

Over the same period, net written premium volume was relatively flat and even slightly positive. Calculation of the net-to-gross ratio shows that the company's net retention had been growing since 2014, from 80% in 2014 to 93% in 2018. This means that the company was ceding fewer premium dollars to its reinsurers. This could have been attributed to either a decision by the company to retain more business or a softening in reinsurance prices over the period or both. Observations such as these would warrant further inquiry of company management to fully understand the cause for changes in the company's direct, assumed and ceded business volume.

Table 9 shows the gross written premium figures by line of business segment as reported by Fictitious, below which the corresponding distribution of gross written premium by segment is shown.

TABLE 9

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
Gross premiums written (GPW)	2018	2017	2016	2015	2014
1. Liability lines	13,281,000	13,843,000	15,075,000	16,422,000	16,815,000
2. Property lines	5,566,000	4,990,000	5,436,000	5,925,000	6,155,000
3. Property and liability lines	9,649,000	8,936,000	8,651,000	8,544,000	8,355,000
4. All other lines	138,000	316,000	357,000	347,000	345,000
5. Non-proportional reinsurance lines	–	–	–	–	–
6. Total	28,634,000	28,085,000	29,519,000	31,238,000	31,670,000
Distribution of GPW	2018	2017	2016	2015	2014
Liability lines	46%	49%	51%	53%	53%
Property lines	19%	18%	18%	19%	19%
Property and liability lines	34%	32%	29%	27%	26%
All other lines	0%	1%	1%	1%	1%
Non-proportional reinsurance lines	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%

For Fictitious, the lines of business flowing into the segments identified in Table 9 are as follows:[38]

1. Liability lines: workers' compensation, other liability and automobile liability
2. Property lines: fire and auto physical damage
3. Property and liability lines: homeowners and commercial multiple peril
4. All other lines: fidelity

Fictitious does not write any non-proportional reinsurance (line 5).

Over the five-year period ending in 2018, Fictitious' writings declined in the liability lines (line 1) and grew in the property and liability lines (line 3). Writings in the straight property lines (line 2) remained consistent over the period.

Property lines tend to be short-tailed in nature; property claims are reported and paid relatively quickly when compared to liability claims. Shifts from liability to property lines would tend to result in a reduction in uncertainty surrounding the company's loss and loss adjustment expense (LAE) reserves. However, shifts to the property lines increase uncertainty due to the exposure to catastrophe loss.

A similar analysis can be performed on Fictitious' net written premium data.

[38] Written premium by line of business is shown in Part 1B, Premiums Written, of the U&IE.

STATEMENT OF INCOME

The Five-Year Historical Data exhibit also provides summarized information from the Statement of Income that is useful in identifying components of changes in a company's net income (e.g., whether attributed to underwriting or investments or other income). Table 10 shows this data for Fictitious.

TABLE 10

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)

Statement of Income	2018	2017	2016	2015	2014
13. Net underwriting gain (loss)	(2,133,000)	1,488,000	2,544,000	1,883,000	2,773,000
14. Net investment gain (loss)	4,305,000	4,415,000	2,850,000	3,993,000	4,747,000
15. Total other income	33,000	47,000	38,000	143,000	47,000
16. Dividends to policyholders	46,000	32,000	23,000	29,000	31,000
17. Federal and foreign income taxes incurred	(20,000)	963,000	1,489,000	1,378,000	1,304,000
18. Net income	2,179,000	4,955,000	3,920,000	4,612,000	6,232,000
Increase/(decrease) year-over-year	(2,776,000)	1,035,000	(692,000)	(1,620,000)	
Percentage increase/(decrease) year-over-year	-56%	26%	-15%	-26%	

We see that Fictitious' net income was been positive in each of the years 2014 through 2018, with growth achieved in 2017 over 2016 after two years of decline. The $1 million (+26%) growth observed in 2017 was predominantly attributed to improvements in the financial markets and a reduction in taxes. Investment gains improved in 2017

Despite relatively strong return on investments in 2018, Fictitious experienced a 56% decline in net income in 2018 over 2017 due to a net underwriting loss of $2 million. Given what we know about the company's shift toward property lines over the period 2014 through 2018, and consequential increase in exposure to catastrophe losses, we can hypothesize that the underwriting loss in 2018 was due to the high frequency of catastrophe events during the year. Investigation of other statements and exhibits within Fictitious' Annual Statement can help us validate our theory.

As discussed in Chapter 8. The Statutory Income Statement: Income and Changes to Surplus, the Statement of Income on page 4 of the Annual Statement provides the components of net underwriting gain (loss), net investment income gain (loss) and other income, and each component can be further investigated through various supporting schedules. For example, as displayed in the Statement of Income for Fictitious, the net underwriting loss of $2 million was primarily driven by an increase in losses incurred during 2018 ($17 million in 2018 versus $13 million in 2017, per line 2 of the Statement of Income).

We can drill down further by looking at the one-year development line (Development in estimated losses and loss expenses incurred prior to current year) within the five-year exhibit

to see whether this increase was attributed to prior-year development or current-year incurred losses.

TABLE 11

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD in 000s)					
	2018	2017	2016	2015	2014
73. Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2, Summary, Line 12, Column 11)	(875)	(1,354)	(1,618)	(1,959)	(918)

As displayed in the one-year development line, loss and defense and cost containment (DCC) development in 2018 on prior accident years was negative $875,000.[39] This means that the company experienced favorable development in 2018 on the prior years in the aggregate. As a result, the underwriting loss in 2018 must have been due to current (2018) accident year incurreds, providing further evidence that catastrophes were the cause. A review of accident year 2018 loss and DCC experience per Schedule P can confirm this.

Turning to Schedule P, Part 2, Summary, we see that accident year 2018 incurred loss and DCC was $19 million, approximately $3 million higher than it had been in the company's 10-year history. Later in Schedule P, the line of business detail shows that the company experienced higher incurred loss and DCC on the homeowners/farmowners line (roughly $4 million on accident year 2018 versus $2.5 million on accident year 2017). This further suggests that Fictitious, like the rest of the insurance industry, was adversely impacted by the natural catastrophes in 2018. However, Fictitious appeared to have been relatively unscathed by the 2017 catastrophes. A review of Fictitious' mix of business by and within affected state(s) and discussions with management might help explain why Fictitious was not as impacted as the rest of the industry by catastrophes in 2017.

With respect to investment gains in 2017, a line-by-line comparison of the Exhibit of Net Investment Income within the company's current-year and prior-year Annual Statements can provide further details on changes in the company's investment income, as can a line-by-line comparison of changes in amounts by asset class within the Exhibit of Capital Gains (Losses). While these two exhibits are not included in the Annual Statement excerpts provided for Fictitious, a study of the changes in net investment income can be made by reviewing these exhibits for one of the (real) insurance companies on the CAS Exam 6 U.S. Syllabus.

[39] We acknowledge that Schedule P, Part 2, Summary, provides both loss and DCC, while we are focusing on the change in incurred losses only. However, as shown in the Statement of Income, loss adjustment expenses have not changed significantly in dollar terms. We therefore feel this comparison is reasonable for illustration purposes.

Absent these exhibits for Fictitious, we expect that the growth in investment income in 2017 was most likely due to a rebound in the financial markets post crisis.

As displayed in the Five-Year Historical Data exhibit for Fictitious, the decline in taxes in 2018 is directionally consistent with what one would expect with a decline in income. We also expect the decline in taxes in 2018 to be in part attributed to the Tax Cuts and Jobs Act of 2017 ("TCJA"), which became effective beginning tax year 2018 and changed key federal tax rules. The changes most significant to property/casualty insurance carriers were related to the corporate tax rate, the loss reserve discounting rules, and the base erosion and anti-abuse tax. Further details on the impact of TCJA on property/casualty insurers are provided in Chapter 26.

However, the decrease in taxes between 2016 and 2017 by approximately $0.5 million (from $1,489,000 to $963,000) is somewhat counterintuitive. Generally, one would expect to pay more taxes the higher the income. While not included in the Annual Statement excerpts provided for Fictitious, the note in the financial statements titled "Income Taxes" (number 9 in the Notes to Financial Statements of the 2018 Annual Statement) can be helpful in explaining movements in taxes from year to year, such as that which occurred for Fictitious. This note provides details on deferred tax assets and losses and shows what taxes would have been if a straight 35% statutory tax rate was used. It also provides the reasons for differences between the total recorded income tax and taxes at the statutory rate, which might in turn explain higher or lower taxes paid in a particular year.

BALANCE SHEET

The balance sheet section of the Five-Year Historical Data exhibit contains summarized information that is useful in identifying components of changes in surplus (e.g., whether attributed to changes in assets or certain liability items) over time.

Only two major asset categories are provided: (1) total admitted assets and (2) premiums and considerations. However, the distribution of assets by class is provided further along in the exhibit (percentage distribution of cash, cash equivalents and invested assets). For trend analysis, the distribution of assets by class is more useful than the actual dollar amounts. When analyzing the health of a property/casualty insurer, things to look out for include large holdings in risky asset classes or changes in mix to riskier classes. However, the user would also look to the company's use of hedging vehicles to mitigate increased holdings in riskier investments, such as derivative instruments (see Chapter 8. The Statutory Income Statement: Income and Changes to Surplus).

The remaining lines within the balance sheet section of the exhibit are summarized items from the Liabilities, Surplus and Other Funds page. Of most relevance to the property/casualty actuary is the level of loss and LAE reserves, unearned premiums, and surplus relative to the actuary's knowledge of the underlying business and the changes therein.

A review of Fictitious' data shows no significant changes in these items other than a dip in surplus in 2015 (6% decrease from 2014) and 2017 (12% decrease from 2016). The capital and surplus account within the Statement of Income shows that the large decrease in 2017 was attributed to sizeable dividends paid to stockholders during the year (approximately $10 million). This can also be seen in the Capital and Surplus Account section of the Five-Year Historical Data exhibit. This section provides two sources of the change in surplus: that due to unrealized capital gains (losses) and that resulting from dividends paid by the company to its stockholders.

RISK-BASED CAPITAL

We will discuss Risk-Based Capital (RBC) in detail in Chapter 19. Risk-Based Capital. It is a solvency framework developed by the National Association of Insurance Commissioners from which an amount of regulatory capital is determined formulaically based on the application of specified factors to an insurance company's recorded admitted assets and liabilities as of year-end. The calculated amount of regulatory capital, or RBC, is compared to the total adjusted capital recorded by the insurance company at year-end to determine the level, if any, of company or regulatory action required from a solvency perspective.

The components of the RBC ratio are provided in the Five-Year Historical Data exhibit but not the RBC ratios themselves. However, the user can calculate the RBC ratios from the information provided in the Five-Year Historical Data exhibit. Table 12 provides the figures shown in lines 28 and 29 of Fictitious Insurance Company's 2018 Five-Year Historical Data, below which we show the RBC ratios that we calculated from lines 28 and 29.

TABLE 12

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
Risk-Based Capital analysis	2018	2017	2016	2015	2014
28. Total adjusted capital	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
29. Authorized control level RBC	5,588,000	6,097,300	5,854,000	5,685,000	6,517,000
Total adjusted capital as a percent of ACL (= Line 28 / Line 29)	555%	518%	611%	573%	530%
Total adjusted capital as a percent of RBC (= Line 28 / (Line 29*2))	278%	259%	306%	286%	265%
Reduction in capital to next RBC level (= Line 28 - (Line 29*2))	19,848,000	19,413,400	24,085,000	21,202,000	21,533,000

Table 98 of this publication provides the various levels of company and/or regulatory action in response to a company's calculated RBC ratios. For Fictitious, the percentage of adjusted capital to authorized control level (ACL) RBC ranged between 518% to 611% over the five-year period 2014 through 2018, which is 2.6 to 3.1 times the first level requiring action (company action level, which is equal to 200% of ACL). This means that Fictitious' capital in 2018 could have been reduced by $20 million before any action was required under the RBC

requirements. This was computed by taking the total capital in line 28 and subtracting from it the upper bound of the range of the first action level of RBC requirements (i.e., 200%).[40]

In establishing a materiality standard for Statement of Actuarial Opinion purposes, some actuaries look at the impact on surplus from a change in RBC levels. In these circumstances, an increase in reserves by an amount that would cause the company (or regulator) to take action under RBC is thought to be material. This is discussed further in Chapter 16. Statement of Actuarial Opinion.

OPERATING PERCENTAGES

Operating percentages provide the distribution of earned premium into its components of loss, LAE, other underwriting expenses and the profit (loss) from underwriting (net underwriting gain (loss)) that remains. For Fictitious, the ratios were reasonably consistent over the five-year period with the exception of 2018. The high loss ratio in 2018 relative to prior years highlights the spike in losses in 2018 and resulting loss from underwriting.

Spikes or changes in other underwriting expenses directly impact profitability and would be investigated further as to whether such costs were necessary and/or indicative of costs to be incurred by the company in the future.

ONE- AND TWO-YEAR LOSS DEVELOPMENT

Actuaries, in particular those that work in the reserving area, pay considerable attention to the last four lines of the Five-Year Historical Data exhibit (lines 73 through 76 of 2018 Five-Year Historical Data exhibit), as this information shows how the company's prior-year loss and DCC reserves have developed over one- and two-year time horizons.

We already presented the one-year development line (line 73) when interpreting the cause of the underwriting loss incurred by the company in 2018. The subsequent line (line 74) shows the relationship of one-year loss and DCC development to the company's surplus as recorded in the prior year's balance sheet. The purpose is to show the impact of adverse or favorable reserve development on policyholders' surplus. That is, it shows the percentage of surplus that would have been absorbed (enhanced) as a result of adverse (favorable) loss development.

In a perfect world, development would be nil. However, loss reserves represent estimates made by a company's management based on information available as of a certain point in time. It is expected that actual loss emergence will differ from expected, and company management will revise its estimates each year as additional information becomes available. As a result, it's not often that $0 is observed in the one-year (or two-year) development line.

[40] $19.920 million = $31.024 million - (2 * $5.552 million).

The issue here is not that a company experiences development in its loss reserves, but rather how big the development is and its significance to surplus.

Stakeholders tend to be concerned when large positive numbers are shown in the development lines as this means that the prior-year reserves were deficient. The question is whether the increase is attributed to an anomaly or if it is symptomatic of a trend of under-reserving. Further investigation could be made within the Annual Statement by reading the Notes to Financial Statements, specifically the note on changes in incurred loss and LAE, and looking at Schedule P, Part 2, which may show that the adverse development is coming from a particular year or line of business. Oftentimes, such development is also discussed in public reports by and on behalf of the company (e.g., Form 10-K for public companies or the AMB Credit Report for the company published by A.M. Best). However, nothing supplants discussion with company management.

Table 13 provides both the one-year development line and the relationship of one-year development to prior-year surplus (line 74) for Fictitious.

TABLE 13

Data from Fictitious Insurance Company 2018 Five-Year Historical Data					
	2018	2017	2016	2015	2014
73. Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2, Summary, Line 12, Column 11); USD in 000s	(875)	(1,354)	(1,618)	(1,959)	(918)
74. Percent of development of losses and loss expenses incurred to policyholders' surplus of prior year-end (line 73 divided by Page 4, Line 21, Column 1 x 100)	(2.8)	(3.8)	(5.0)	(5.6)	(2.6)

During 2018, Fictitious' booked net ultimate loss and DCC reserve estimates on accident years 2017 and prior developed favorably by $0.9 million (line 73). This means that, with the benefit of one year's hindsight, the net loss and DCC reserves recorded by the company as of December 31, 2017, were overstated by $0.9 million. That overstatement represented 3% of the company's surplus as of December 31, 2017 (line 74).

Going back a year, with the benefit of one year's hindsight, recorded net loss and DCC reserves as of December 31, 2016, were overstated by $1.4 million, or 4% of surplus.

We can continue going back and observe development in years 2014 through 2016 on prior-year reserves. For Fictitious, the result was consistent over the five-year period; recorded loss and DCC reserves (or ultimate loss and DCC estimates) developed favorably in the

following year. This implies that the company was relatively conservative in establishing its reserve estimates.

While stakeholders and regulators of insurance companies tend to be more concerned when development is adverse, large favorable development also raises an issue with certain parties. For example, the Internal Revenue Service pays close attention to favorable emergence as overstatements in reserves reduce the amount of taxable income. Additionally, investors would be concerned that the company is accumulating funds that could be better invested elsewhere, thereby suppressing the investor's rate of return.

The two-year development lines show similar information as contained in the one-year lines, with the exception that development over a two-year period is provided. For example, Fictitious' recorded net loss and DCC reserves as of year-end 2016 developed favorably by $2.6 million in 2017 and 2018. This represents 7.3% of surplus recorded at the end of 2016.

TABLE 14

Data from Fictitious Insurance Company 2018 Five-Year Historical Data					
	2018	2017	2016	2015	2014
75. Development in estimated losses and loss expenses incurred two years before the current year and prior year (Schedule P, Part 2, Summary, Line 12, Column 12); USD in 000s	(2,602)	(2,906)	(3,680)	(2,544)	(1,059)
76. Percent of development of losses and loss expenses incurred to policyholders' surplus of second prior year-end (Line 75 divided by Page 4, Line 21, Column 2 x 100)	(7.3)	(8.9)	(10.6)	(7.3)	(3.0)

This information enables the actuary to see whether the development tends to be isolated to the first year of development or continues to the next. In Fictitious' case, the favorable development continued through year two. For example, one-year development on year-end 2016 reserves developed by $1.4 million in 2017 (line 73) and then another $1.2 million in 2018 (per line 75, computed by taking $2.6 million and subtracting the one-year development of $1.4 million).

CHAPTER 13. OVERVIEW OF SCHEDULES AND THEIR PURPOSE

OVERVIEW

Schedules A through E

The first eight schedules (Schedules A through E) of the Annual Statement provide further transparency of the company's assets, as displayed in the balance sheet of the statutory financial statements. The purpose of these schedules is to assist stakeholders and regulators in identifying and analyzing risks inherent in those assets, changes in those assets and differences in their valuation.

The following outlines the contents of Schedules A through E:

TABLE 15

Schedule	Part	Title
A	1	Real Estate Owned December 31 of Current Year
A	2	Real Estate Acquired and Additions Made During the Year
A	3	Real Estate Disposed During the Year
B	1	Mortgage Loans Owned December 31 of Current Year
B	2	Mortgage Loans Acquired and Additions Made During the Year
B	3	Mortgage Loans Disposed, Transferred or Repaid During the Year
BA	1	Other Long-Term Invested Assets Owned December 31 of Current Year
BA	2	Other Long-Term Invested Assets Acquired and Additions Made During the Year
BA	3	Other Long-Term Invested Assets Disposed, Transferred or Repaid During the Year
D	Part 1	Long-Term Bonds Owned December 31 of Current Year
D	Part 2 - Section 1	Preferred Stocks Owned December 31 of Current Year
D	Part 2 - Section 2	Common Stocks Owned December 31 of Current Year
D	Part 3	Long-Term Bonds and Stocks Acquired During Current Year
D	Part 4	Long-Term Bonds and Stocks Sold, Redeemed or Otherwise Disposed of During Current Year
D	Part 5	Long-Term Bonds and Stocks Acquired During the Year and Fully Disposed of During Current Year
D	Part 6 - Section 1	Valuation of Shares of Subsidiary, Controlled or Affiliated Companies
D	Part 6 - Section 2	Valuation of Shares of Lower Tier Company
DA	Part 1	Short-Term Investments Owned December 31 of Current Year
DB	Part A - Section 1	Options, Caps, Floors, Collars, Swaps and Forwards Open December 31, of Current Year
DB	Part A - Section 2	Options, Caps, Floors, Collars, Swaps and Forwards Terminated During Current Year
DB	Part B - Section 1	Futures Contracts Open December 31 of Current Year
DB	Part B - Section 2	Futures Contracts Terminated During Current Year
DB	Part C - Section 1	Company's positions in replication (synthetic asset) transactions Open December 31 of Current Year
DB	Part C - Section 2	Company's positions in replication (synthetic asset) transactions Terminated During Current Year
DB	Part D	Counterparty Exposure for Derivative Instruments Open December 31 of Current Year
DL	Part 1	Securities Lending Collateral Assets (Reinvested Collateral Assets Owned December 31 Current Year)
DL	Part 2	Securities Lending Collateral Assets (Reinvested Collateral Assets Owned December 31 Current Year)
E	Part 1	Cash
E	Part 2	Cash Equivalents
E	Part 3	Special Deposits

There is considerable information within each schedule, including a description of each asset, its value and the basis for valuation. We do not intend to provide all the details of each asset

schedule. As discussed previously, most property/casualty actuaries will not need to have a deep understanding of all of the asset classes on the balance sheet. Therefore, we only provide a brief description of each schedule and show how the reader can source the items listed in the asset side of the balance sheet (page 2 of the Annual Statement) to these schedules.

While we will present each of Schedules A through E in order of presentation in the Annual Statement, keep in mind the distribution of admitted assets by class for the property/casualty industry as a whole, as was provided in Chapter 7. Statutory Balance Sheet: A Measure of Solvency. Table 16 provides a comparison of the distribution for the industry to that of Fictitious Insurance Company as of December 31, 2018.

TABLE 16[41]

Summary of Net Admitted Assets (column 3) on Page 2 of the Annual Statement				
Assets	Line Number per Page 2	Schedule Reference	Property Casualty Industry	Fictitious Insurance Company
Investments				
Bonds	1	D – Part 1	50.7%	58.7%
Preferred stocks	2.1	D – Part 2 – Section 1	0.3%	0.0%
Common stocks	2.2	D – Part 2 – Section 2	19.2%	19.3%
Mortgage loans	3.1 + 3.2	B	1.0%	0.2%
Real estate	4.1 + 4.2 + 4.3	A	0.7%	3.8%
Cash and short-term investments	5	E, DA	5.0%	1.0%
Contract loans	6		0.0%	0.0%
Derivatives	7	DB	0.0%	0.0%
Other investments	8 + 9 + 10 + 11	BA, DL	6.7%	4.7%
Total cash and investments	12		84.1%	87.8%
Total assets	28		100.0%	100.0%

Note: Contract loans are loans on contracts issued by the insurance company. They typically pertain to life insurance contracts. There is no schedule within the Annual Statement that pertains to or provides additional disclosure about contract loans.

The assets detailed in Schedules A through C and E make up a relatively small portion of the total admitted assets of the property/casualty insurance industry at year-end 2018 (less than 15%). This relationship has remained relatively consistent over the years. Property/casualty insurers tend to invest in relatively short-term, fixed assets of low risk given their need to be able to pay claims emanating from short-term contracts (as opposed to long-term life insurance contracts). As a result, the largest holding of a property/casualty insurer tends to

[41] The distribution of assets by class within this table is based on admitted assets. Schedules A through E provide supporting detail for total assets, including amounts that become nonadmitted in column 2 of the asset side of the statutory balance sheet.

be in bonds, followed by common stocks. Therefore, Schedule D tends to be the most populated of the asset schedules within the Annual Statement.

In assessing the financial health of an insurance company, it is important to understand differences in the distribution of assets by class relative to the industry. In particular, large concentrations in riskier asset classes would warrant additional scrutiny. The information contained in Schedules A through E and in the notes and interrogatories within the Annual Statement will provide some level of quantitative and qualitative detail to aid in the assessment. However, enhanced understanding will come through inquiries of management as to its investment policy, including any hedging strategies that have been implemented to mitigate investments in higher-risk asset classes.

Schedules F and P

Property/casualty actuaries tend to spend more time focusing on page 3 (Liabilities) of the balance sheet than on page 2 (Assets). Therefore, of all the schedules within the Annual Statement, property/casualty actuaries tend to spend the most time with Schedules F and P, in particular Schedule P. Schedule F pertains to reinsurance accounting, and Schedule P pertains to loss and loss adjustment expense reserves. We will devote much of our attention to these Annual Statement schedules in separate chapters for each (Chapter 14. Schedule F and Chapter 15. Schedule P).

Schedules T and Y

The remaining two schedules, Schedule T and Schedule Y, will be discussed at the end of this chapter. These schedules provide details on the insurance company's premium writings by state and organizational structure, respectively.

SCHEDULE A

Schedule A provides information on real estate directly owned by the insurance company. Schedule A, Part 1 provides a detailed listing of all real estate owned by the company as of December 31 of the current year, while Parts 2 and 3 provide a detailed listing of real estate acquired and disposed during the year, respectively.

Schedule A, Part 1, column 9, Book/Adjusted Carrying Value Less Encumbrances, is the source of the information provided in line 4 of the asset side of the balance sheet. Amounts are provided for each property that the reporting entity owns, grouped in the same three parts as shown in line 4 of page 2:

- 4.1 Properties occupied by the company
- 4.2 Properties held for the production of income
- 4.3 Properties held for sale

All figures are shown less the amount of any encumbrances, which include items such as a lien on the company's property or outstanding principal balance of a mortgaged property.

Consistent with the rest of the property/casualty insurance industry (1%), real estate was a small asset class for Fictitious in 2018, representing less than 4% of its total assets. Although small, actuaries will look at the level of an insurance company's investment in long-term assets and associated cash flows relative to the cash outflows of its liabilities. For example, a property/casualty insurer writing short-tailed lines of business (e.g., homeowners) will require relatively liquid and continual flows from its assets to pay its claims. A large proportion of this company's assets in real estate holdings, or other longer-term assets that do not have constant outflows, might raise questions about liquidity of the company's assets. This is particularly true during unstable economic times when the real estate market is at a low and the seller may not be able to dispose of the investment let alone get the expected value. Schedule A, Part 3 shows what the reporting entity was able to sell real estate investments for over the past year, relative to the value of the investment as shown in the entity's prior-year statement.

SCHEDULE B

Schedule B provides information on mortgage loans owned by the insurance company that are secured by real estate. These are instances where the insurance company has issued a mortgage loan to another party.

Schedule B is organized in the same three parts as Schedule A. Part 1 provides a detailed listing of all mortgage loans owned by the company as of December 31 of the current year, while Parts 2 and 3 provide a detailed listing of mortgage loans acquired and disposed during the year, respectively. Part 3 includes mortgage loans transferred or repaid during the year.

Part 1 is the source of the information provided in line 3 of the asset side of the balance sheet. Line 3 of the asset side of the balance sheet is broken up into two parts:

3.1 First liens
3.2 Other than first liens

The source of the figures provided in line 3 is column 8, book value/recorded investment excluding accrued interest, of Schedule B, Part 1. The figures in column 8 reconcile to the amounts in lines 3.1 and 3.2 on the asset side of the balance sheet. However, it is not evident from Schedule B as to which loans are first liens.

Part 1 provides a detailed listing of mortgage loans owned by the company in the following groupings:

- Mortgages in good standing, which are those loans where the terms are being met by borrowers.

- Restructured mortgages, which are those loans where the terms have been restructured in 1986 or subsequent due to delinquency.
- Mortgages with interest more than 90 days due and not in the process of foreclosure.
- Mortgages in the process of foreclosure.

Issuing mortgages is not a core business strategy of a property/casualty insurance company. Further, mortgage loans are relatively illiquid assets. Therefore, insurers don't have large holdings in Schedule B assets. However, for those insurance companies that do invest in mortgage loans, the groupings provided in Schedule B provide the reader with a sense of the risk associated with the company's mortgage loan investments. For example, investments in mortgages in the process of foreclosure are riskier than those in good standing.

Only 0.2% of Fictitious' assets were invested in mortgage loans on real estate as of December 31, 2018, as compared to 0.3% for the industry.

SCHEDULE BA

Schedule BA provides information on other long-term invested assets owned by the insurance company. These are assets not included in any of the other invested asset schedules, such as real estate that is not owned directly by the insurance company and therefore excluded from Schedule A. Other examples of BA assets include investments in joint ventures, partnership interests and surplus debentures.

Schedule BA, Part 1 provides a detailed listing of other long-term invested assets owned by the company as of December 31 of the current year, while Parts 2 and 3 provide a detailed listing of other long-term invested assets acquired and disposed during the year, respectively. Part 3 includes other long-term invested assets transferred or repaid during the year.

The total in column 12, book/adjusted carrying value less encumbrances, of Schedule BA, Part 1, is the source of the figure provided in line 8 of the asset side of the balance sheet.

As with real estate investments, actuaries will look at the level of cash flows from a company's long-term invested assets relative to the duration of its liabilities for liquidity purposes.

As displayed in Table 17, Fictitious had only 5% of its assets invested in Schedule BA assets at year-end 2018. Schedule BA assets are included within the other investments line. Other investments also include receivables for securities, securities lending reinvested collateral assets and aggregate write-ins for invested assets.

TABLE 17

Current-Year Assets, 2018 Annual Statement Page 2, Column 1 (USD)	
8. Other invested assets (Schedule BA)	4,726,000
28. Total assets	101,454,000
Percentage of total assets (Row 8 / Row 28)	4.7%

SCHEDULE D

Schedule D provides information on bonds and stocks owned by the insurance company. It is broken into six parts, 1 through 6. The amounts shown on the assets side of the balance sheet for bonds and stocks comes from the book/adjusted carrying value column, within Schedule D, Parts 1 and 2.

Part 1

Part 1 provides a detailed listing of the long-term bonds and certificates of deposit (CDs) owned by the insurance company as of December 31 of the current year. The term "long-term" is intended to exclude bonds and CDs with maturity or repurchase dates one year or less from the date acquired and cash equivalents with maturities of three months or less. Bonds that are not long term are reported in other schedules. Bonds with maturities of one year or less are reported in Schedule DA. CDs with maturities of one year or less are reported in Schedule E, Part 1. Cash equivalents are reported in Schedule E, Part 2. Schedules DA and E are discussed in subsequent sections of this chapter.

The source of the balance sheet figure for bonds is the total in column 11 (Book/Adjusted Carrying Value) of Schedule D, Part 1.

In Part 1, bonds are separated into the following categories:

- U.S. governments
- All other governments
- U.S. states, territories and possessions (direct and guaranteed)
- U.S. political subdivisions of states, territories and possessions (direct and guaranteed)
- U.S. special revenue and special assessment obligations and all non-guaranteed obligations of agencies and authorities of governments and their political subdivisions
- Industrial and miscellaneous (unaffiliated)
- Hybrid securities
- Parent, subsidiaries and affiliates

Within each of the aforementioned categories, there are issuer obligations, residential mortgage-backed securities (MBS), commercial MBS, and other loan-back and structured securities, with subtotals for each.

In addition to book/adjusted carrying value, the columns within Part 1 enable the user to obtain an understanding of fluctuations in value over the past year and time to maturity of each bond. As noted, users of the Annual Statement consider time to maturity, and therefore liquidity, relative to liability duration.

Part 2

Part 2 provides a detailed listing of the stocks owned by the insurance company as of December 31 of the current year. Preferred stocks are in Section 1 of Schedule D, Part 2, and Common stocks are in Section 2.

Schedule D, Part 2 is the source of the information provided within line 2 of the asset side of the balance sheet titled “Stocks (Schedule D).”

The source of the balance sheet figure for preferred stocks is the total in column 8, Book/Adjusted Carrying Value, of Schedule D, Part 2, Section 1, whereas the source for common stocks is the total in column 6, Book/Adjusted Carrying Value, of Schedule D, Part 2, Section 2.

In Part 2, Section 1 of Schedule D, preferred stocks are separated into the following categories:

- Industrial and miscellaneous (unaffiliated)
- Parent, subsidiaries and affiliates

Part 2, Section 2 has the additional categories for common stocks of:

- Mutual funds
- Money market mutual funds

Parts 3 through 6

Part 3 provides a detailed listing of long-term bonds and stocks acquired during the current year and still owned by the company as of December 31 of the current year. Those acquired and disposed of during the current year are only provided in subtotal in Part 3, with the details reported in Part 5.

Part 4 provides a detailed listing of long-term bonds and stocks that were owned as of the beginning of the current year and disposed of during the year through sale, redemption or

other means. Those acquired and sold during the current year are provided in detail in Part 5, with only subtotals in Part 4.

Part 6 provides a detailed listing of preferred and common stocks in affiliated companies. This is particularly relevant in the calculation of the R_0 charge in the RBC calculation, as we will see in Chapter 19. Risk-Based Capital.

SCHEDULE DA

Schedule DA provides information on short-term investments owned by the insurance company. According to the 2018 National Association of Insurance Commissioners (NAIC) Annual Statement Instructions Property/Casualty, this schedule is to "include all investments whose maturities (or repurchase dates under repurchase agreement) at the time of acquisition were one year or less except those defined as cash or cash equivalents in accordance with Statement of Statutory Accounting Principles No. 2R, Cash, Cash Equivalents, Drafts, and Short-term Investments."[42]

Schedule DA, Part 1 provides a detailed listing of short-term investments by the company as of December 31 of the current year. This is the source of the information provided within line 5 of the asset side of the balance sheet.

Short-term investments can include the following asset classes:

- Bonds
- Mortgage loans and other short-term invested assets for parent, subsidiaries and affiliates
- Mortgage loans
- Exempt money market mutual funds
- Class one money market mutual funds
- Other short-term invested assets

Fictitious had less than 1% of its assets invested in short-term investments in 2018.

SCHEDULE DB

Schedule DB provides information on derivative instruments owned by the insurance company. It is broken into four parts, A through D. Part A provides the company's positions in options, caps, floors, collars, swaps and forwards. Part B provides the company's positions in futures contracts. Part C provides the company's positions in replication (synthetic asset) transactions. And in Part D, the company reports counterparty exposure for derivative

[42] 2018 NAIC Annual Statement Instructions Property/Casualty, page 367.

instruments open December 31 of the current year. Counterparty exposure is the exposure to credit risk.

Parts A and B are further broken into two sections. Section 1 provides open positions during the year, and Section 2 provides positions terminated during the year.

Schedule DB, Parts A and B are the source of the information provided within line 7 of the asset side of the balance sheet, Derivatives (Schedule DB).

While property/casualty insurance companies do not invest much in the derivatives market, derivatives are used to hedge the mismatch between the timing and payment of assets and liabilities. A company investing in a greater proportion of risky assets than the industry (say a higher proportion in common stocks than bonds), could be expected by its stakeholders to have a hedging strategy in place to mitigate those risks.

As displayed on line 7 of the asset side of its balance sheet, Fictitious did not use derivatives in its investment strategy in 2018.

SCHEDULE DL

Schedule DL provides information on securities lending collateral assets. Schedule DL is a fairly new schedule in the Annual Statement, added in 2010 as a result of the financial crisis in 2008.[43]

Securities lending received a lot of publicity during the financial crisis of September 2008. Securities lending involves a company lending securities that it does not actively trade to another party for a fee. The borrower will generally sell the borrowed security, in anticipation of repurchasing it at a lower price before returning it to the lender. The difference between the sale price and repurchase price is profit to the borrower.

The borrower is required to post collateral with the lender. This collateral may in turn be invested by the lender; however, the lender needs to have the collateral available for return when the borrower decides to return the borrowed security. These arrangements tend to be for less than a year, and the borrower generally can return the security on relatively short notice. Therefore, a prudent investment strategy would call for investment of the collateral by the lender in short-term, low-risk, liquid markets. Investment in long-term, riskier securities is one of the causes of the financial crisis in 2008.

According to an article by the NAIC and The Center for Insurance Policy and Research,[44] American International Group (AIG) was involved in securities lending whereby securities owned were loaned in exchange for fee and cash collateral. During the period 2005 through

[43] NAIC and The Center for Insurance Policy and Research, Capital Markets Special Report, Securities Lending in the Insurance Industry, http://www.naic.org/capital_markets_archive/110708.htm, (July 11, 2011)
[44] Ibid.

2007, investments of the collateral were made in long-term subprime residential MBS, which subsequently experienced significant declines in market value. When the borrowers came back to AIG to exchange the borrowed securities for the cash collateral they had provided, AIG was experiencing liquidity constraints. The demand for cash from securities lending counterparties put further constraints on AIG, resulting in regulators and the U.S. government stepping in to help alleviate the liquidity issue and reduce strains on AIG's capital.

While securities lending was not the main cause of the financial crisis in 2008, one of the many lessons learned was the lack of transparency in the securities lending market. Schedule DL was created to provide further transparency by providing detailed information on the collateral assets that are reinvested by the insurance company, including the fair value and book value and the date the agreements mature. As the length of the agreement term increases, so does the risk to the insurance company. If borrowers in the company's securities lending program were to return the borrowed securities and request their collateral back with short notice, the company may have difficulty meeting the cash (collateral) demand.[45]

Schedule DL, Part 1 contains those collateral assets that are not included in other investment schedules within the Annual Statement (e.g., Schedule A, B, BA, D, DA and E). Part 2 contains those that are reported in the other asset schedules. Therefore, Part 1 is the source of the information provided in line 10 of the asset side of the balance sheet.

The total in column 6, Book/Adjusted Carrying Value, of Schedule DL, Part 1, is the source of line 10 of the asset side of the balance sheet.

As displayed in Table 18, Fictitious had an immaterial securities lending program relative to total assets and policyholders' surplus at year-end 2018. As a result, sudden demand to return collateral to a borrower would not have had a significant impact on Fictitious' balance sheet.

TABLE 18

Current-Year Assets, 2018 Annual Statement Page 2, Column 1 (USD)	
10. Securities lending reinvested collateral assets (Schedule DL)	79,000
28. Total assets	101,454,000
Percentage reinvested collateral assets (Row 10 / Row 28)	0.08%
Total PHS	31,024,000
Percentage reinvested collateral assets	0.25%

[45] Regulators became aware of this strategy as a result of the financial examination process, which occurs only once every three to five years.

SCHEDULE E

Schedule E provides information on the insurance company's cash and cash equivalents.

Schedule E, Part 1 provides:

- A detailed listing of cash on deposit with banks, trust companies, and savings and loan and building and loan associations
- Totals for cash held in the company's offices
- CDs maturing one year or less (long-term CDs are reporting in Schedule D)

Part 2 provides a detailed listing of investments in what are referred to as cash equivalents and are therefore maturing within three months or less.

Part 3 provides a detailed listing of special deposits, which include assets reported in the various asset schedules within the Annual Statement but are segregated for a special purpose, such as bail bonds, workers' compensation, property and casualty insurance, collateral and escrow.

Column 6, Balance, of Schedule E, Part 1, is the source of the cash amount included in line 5 of the asset side of the balance sheet. Column 6, book/adjusted carrying value of Schedule E, Part 2, is the source of the amount of cash equivalents, which are also included in line 5.

Table 19 shows that Fictitious had less than 1% of its assets in cash and cash equivalents at year-end 2018.

TABLE 19

Current-Year Assets, 2018 Annual Statement Page 2, Column 1 (USD)	
5. Cash ($153,000, Sch. E-Part 1), cash equivalents ($0, Sch. E-Part2) and short-term investments ($829,000, Sch. DA)	983,000
28. Total assets	101,454,000
Percentage of total assets (Row 5 / Row 28)	1.0%

SCHEDULE T

Schedule T has two parts:

1. Exhibit of Premiums Written
2. Interstate Compact – Exhibit of Premiums Written

Each part is arranged showing its content by U.S. state (50); the District of Columbia; five U.S. territories (American Samoa, Guam, Puerto Rico, U.S. Virgin Islands and Northern Mariana Islands); Canada; and a line for aggregate other alien territories.[46]

The following provides a general description of the content of each part and their use(s).

Exhibit of Premiums Written

The purpose of this schedule is to apportion premiums, losses and other items amongst the states or territories in which the company writes business.

The first column shows the "active status" of the company for each state/territory. Active status is denoted by:

L: Licensed insurance carrier or domiciled Risk Retention Group (RRG)
R: Registered – non-domiciled RRGs
Q: Qualified or accredited reinsurer
E: Eligible – reporting entities eligible or approved to write surplus lines in the state
N: None of the above – not allowed to write business in the state

The total line of this column shows the number of states/territories that the company is licensed in.

Direct losses, premiums and other information are required to be allocated by state/territory regardless of the active status reported. The information requested includes:

- Written premiums
- Earned premiums
- Policyholder dividends
- Paid losses
- Incurred Losses
- Unpaid losses
- Finance and service charges
- Direct premiums written for federal purchasing groups

The complicated part of completing this schedule is figuring out how to allocate the foregoing items by state/territory. The NAIC Annual Statement Instructions Property/Casualty looks for the premiums to be reported "based on the physical location of the insured risk (except

[46] According to the glossary in the textbook Property-Casualty Insurance Accounting issued by Insurance Accounting & Systems Association, Inc., Eighth Edition (2003), First Addendum (2006), an alien insurance company is defined as "An insurer or reinsurer domiciled outside the U.S. but conducting an insurance or reinsurance business in the U.S."

individual and group health insurance)."[47] Losses are to be reported to the states where the associated premium is allocated.

For example, an insurer writes workers' compensation insurance for an organization that has employees located across the country. The foregoing items need to be allocated to each state/territory based on primary workplace of each employee. Table 20 shows additional examples of the basis for allocating premiums and losses by state/territory, according to the NAIC instructions.

TABLE 20

Line of Business	Basis for Allocation by State
Property lines, such as fire, homeowners, boiler and machinery	Location of property
Marine coverages, where property is in transit	Beginning state location
Automobile lines	Location of principal garage of each automobile
Liability lines (other than auto) where premium determined per location	Location of principal office of operation

Companies are required to describe the basis for the allocation in the footnote of Schedule T.

Schedule T is useful to actuaries in several instances, such as the following:

- Actuaries use this schedule to learn where the company writes its business to further research and consider the insurance laws of those states. This is particularly important for workers' compensation insurers where estimates of unpaid claims depend on each state's laws.
- Actuaries also look to this schedule over a series of historical Annual Statements to see if the company has changed geographic concentration or is growing in a particular state. In addition to regulatory differences by state, changes in geographic mix have an impact on the exposures. For example, for a company writing in California or among fault lines, consideration should be made of the company's exposure to earthquakes.
- For a company where industry loss development factors are used in reserving, actuaries may look to this schedule for a distribution of losses by state to determine weights to apply to industry factors by state.

In addition, as we shall see in Chapter 18. Insurance Expense Exhibit, the totals in Schedule T are used as a means of reconciling items contained in the Insurance Expense Exhibit.

[47] 2018 NAIC Annual Statement Instructions Property/Casualty, page 241.

Interstate Compact – Exhibit of Premiums Written

There is another part to Schedule T that is less well-known to property/casualty actuaries: Interstate Compact – Exhibit of Premiums Written and Allocated by States and Territories. Part 2 only pertains to property/casualty insurers that also write life insurance, annuities, disability income and long-term care insurance products. The purpose of Part 2 is for regulators to monitor writings in these products for consumer protection purposes.

SCHEDULE Y

Schedule Y, Information Concerning Activities of Insurer Members of a Holding Company Group, has two parts:

1. Organizational chart
2. Summary of insurer's transactions with any affiliates

The following provides a brief description of the content and purpose of each.

Part 1 – Organizational Chart

Part 1 is required for those companies that file a registration statement under the Insurance Holding Company System Regulatory Act of the company's domiciliary state.[48]

This part provides exactly what its name says, an organizational chart. In simplest terms, it is similar to a family tree, showing a pictorial representation of where the company lies within an organization and its relationship to the other members of the organization.

We often hear the phrases "sister company," "parent company" and "holding company," but until you see the schematic, it can be difficult to understand where a company fits within an organization. Knowing this and the company's purpose relative to its affiliates is important. For example, the company may have an affiliated managing general agent or other agency that produces its business, or it may have an affiliated claims administrative organization. Consideration of the affiliate's underwriting philosophy and/or claims handling practices is significant in estimating unpaid claims and establishing reserves for the company's liabilities, including those for adjusting expenses.

Sometimes this part is provided in list form as opposed to an actual chart due to the number of companies involved.

[48] Ibid., page 247.

Part 1A – Detail of Insurance Holding Company System

This part must be completed by members of a holding company system. The purpose is to provide information about the relationship between the reporting entity and any parent, subsidiary(ies) and/or affiliate(s). The relationship is identified in Part 1A as either:

- Upstream direct parent (UDP)
- Upstream indirect parent (UIP)
- Downstream subsidiary (DS)
- Insurance affiliate (IA)
- Non-insurance affiliate (NIA)
- Other, which requires an explanation of the relationship in the footnotes to this part (OTH)

Additionally, the controlling entity in the relationship is provided, along with the type of control that the entity has over the other:

- Control through ownership
- Control at the board of directors level
- Control through management
- Control by acting as the attorney-in-fact
- Controlling influence
- Other

If the reporting entity is a member of a holding company system, the reporting entity must include the above items for each parent, subsidiary or affiliate of the reporting entity whose names are listed in column 8 of Schedule Y.

According to the NAIC 2018 Annual Statement Instructions Property/Casualty, which references the Insurance Holding Company System Regulatory Act, "Control shall be presumed to exist if any person, directly or indirectly, owns, controls, holds with the power to vote, or holds proxies representing, ten percent (10%) or more of the voting securities by another person."[49]

As we shall see in Chapter 19. Risk-Based Capital, this information is particularly useful in determining the RBC R_0 charge for investments in insurance affiliates.

Part 2 – Summary of Insurer's Transactions With Any Affiliates

Schedule Y, Part 2, provides a listing of transactions among members of the holding company system where an insurance affiliate was a party to the transaction. Examples include:

[49] Ibid., page 249.

- Shareholder dividends
- Capital infusions
- Purchases/sales of loans or real estate
- Management agreements and service contracts
- Income (disbursements) incurred under reinsurance contracts and reinsurance recoverable (only those transactions that took place during the reporting period are included)

The purpose of this part of Schedule Y is to assist regulators in monitoring monetary flows in and out of insurance company affiliates. This schedule is the same for all members of an insurance holding company system. Therefore, the totals all balance to zero, as an outflow from one company is offset by the inflow to another.

CHAPTER 14. SCHEDULE F

OVERVIEW

As noted in the previous Chapter 13. Overview of Schedules and Their Purpose, Schedule F and Schedule P are two of the Annual Statement schedules that property/casualty actuaries tend to use most. In this chapter we will focus on the content of Schedule F; Chapter 15 focuses on the content of Schedule P.

Schedule F provides details underlying an insurance company's reinsurance transactions on prospective contracts[50] that meet the conditions for reinsurance accounting as defined in SSAP No. 62R. It includes the names of the counterparties to the transactions and the premium, loss and expense amounts that emanate from those transactions as of December 31 of the reporting year. This information is important to actuaries for several reasons:

- Loss and loss adjustment expense (LAE) reserves recorded by an insurance company include business assumed by the company. Knowledge of the source and amount of assumed reinsurance provides valuable information to an actuary in assessing the reasonableness of the gross and net loss and LAE reserve balances. Schedule F, Part 1 provides a listing of assumed premiums and losses by ceding company.

- Loss and LAE reserves recorded on an insurance company's statutory balance sheet are net of reinsurance. Considerable focus is placed on the collectability of that reinsurance by users of the Annual Statement, particularly regulators. In fact, the NAIC Instructions to the Statement of Actuarial Opinion require the Appointed Actuary to provide relevant comment paragraphs to address reinsurance. According to the NAIC Instructions, "Before commenting on reinsurance collectability, the actuary should solicit information from management on any actual collectability problems, review ratings given to reinsurers by a recognized rating service, and examine Schedule F for the current year for indications of regulatory action or reinsurance recoverable on paid losses over 90 days past due."[51]

  Schedule F, Part 3 provides the name of each of the company's reinsurers, a listing of liability amounts ceded to each reinsurer and the amount of collateral held by the insurance company in support of those liabilities. Using this information, research can be done on the financial ratings of the reinsurers to evidence the credit quality of the

[50] According to paragraph 22 of SSAP No. 62R, Property and Casualty Reinsurance, "Prospective reinsurance is defined as reinsurance in which a reinsurer agrees to reimburse a ceding entity for losses that may be incurred as a result of future insurable events covered under contracts subject to the reinsurance."
[51] 2018 NAIC Annual Statement Instructions Property/Casualty, page 13.

reinsurer and assess the risk that the ceding company would not able to collect the balances due from that reinsurer.

Schedule F, Part 3 also provides the aging of ceded reinsurance. An assessment can be made of the company's exposure to collectability issues in light of the reinsurer's payment history and the amount of collateral the company holds in support of its reinsured balances.

- The Statement of Actuarial Opinion also requires the Appointed Actuary to comment on and disclose the amount of net reserves for the insurance company's participation in underwriting pools and associations. Schedule F, Part 1 provides a source for this information. In fact, regulators expect there to be a reconciliation of the amount disclosed in the Statement of Actuarial Opinion to Schedule F.[52]

Schedule F also provides the derivation of the provision for reinsurance, which is included as a liability on the statutory balance sheet (page 3, line 16 of the 2018 Annual Statement). While Statutory Accounting Principles (SAP) requires insurance companies to record loss and LAE reserves net of reinsurance, SAP also presumes that a portion of that reinsurance is not collectible. The provision for reinsurance provides "a minimum reserve for uncollectible reinsurance with an additional reserve required if an entity's experience indicates that a higher amount should be provided. The minimum reserve Provision for Reinsurance is recorded as a liability, and the change between years is recorded as a gain or loss directly to unassigned funds (surplus). Any reserve over the minimum amount shall be recorded on the statement of income by reversing the accounts previously utilized to establish the reinsurance recoverable."[53]

This minimum reserve is computed in Schedule F, Part 3. It reflects the conservative nature of statutory accounting since the entire provision may ultimately be collected.

Schedule F – Part 3 also provides the data used in the calculation of the credit risk charge for reinsurance recoverables required by the NAIC Risk-Based Capital (RBC) formula.

Finally, Schedule F also provides a view of the reporting entity's balance sheet on a gross of reinsurance basis. Ceded reinsurance is a valuable means for insurance companies to mitigate insurance risk. Schedule F, Part 6 enables the user to observe the amount of protection afforded to the company's balance sheet through the use of reinsurance.

[52] American Academy of Actuaries Committee on Property and Liability Financial Reporting, "Statements of Actuarial Opinion on Property and casualty Loss Reserves 2012," Appendix 9a, "Regulatory Guidance On Property and Casualty Statutory Statements of Actuarial Opinion for the Year 2012 Prepared by the NAIC's Casualty Actuarial and Statistical (C) Task Force," page 99.
[53] SSAP No. 62R, paragraph 64.

Note that retroactive reinsurance does not flow through Schedule F.[54] Ceding companies record loss and LAE reserves gross of retroactive reinsurance and assuming companies exclude the retroactive reinsurance from loss and LAE reserves. The same is true for Schedule P[55]; retroactive reinsurance does not flow through Schedule P.

STRUCTURAL ORGANIZATION OF SCHEDULE F

Schedule F is arranged in the following six parts:

Part 1 Assumed Reinsurance as of December 31, Current Year ($000 Omitted)

Part 2 Premium Portfolio Reinsurance Effected or (Canceled) during Current Year

Part 3 Ceded Reinsurance as of December 31, Current Year ($000 Omitted)

Part 4 Issuing or Confirming Banks for Letters of Credit from Schedule F, Part 3 ($000 Omitted)

Part 5 Interrogatories for Schedule F, Part 3 ($000 Omitted)

Part 6 Restatement of Balance Sheet to Identify Net Credit for Reinsurance

Parts 1 and 3 provide details underlying the reinsurance items on a company's balance sheet. One asset item and four liability items on an insurance company's balance sheet come directly from Schedule F.

The asset item is "amounts recoverable from reinsurers" (Assets, page 2, line 16.1). It includes amounts the insurance company has already paid in loss and LAE to its claimants that are recoverable from its reinsurers. The first of the liability items provide this balance from the reinsurer's (i.e., the company in this case, as an assumed reinsurer) perspective (Liabilities, Surplus and Other Funds, page 3, line 2).

The other three liability items that come directly from Schedule F include ceded reinsurance premiums payable, net of ceding commissions, (Liabilities, Surplus and Other Funds, page 3, line 12), funds held by the company under reinsurance treaties (Liabilities, Surplus and Other Funds, page 3, line 13), and the provision for reinsurance (Liabilities, Surplus and Other Funds, page 3, line 16). In addition, the parenthetical reference to unearned premiums for ceded reinsurance in line 9 of page 3 also comes from Schedule F, Part 3 (column 13, total).

[54] According to paragraph 22 of SSAP No. 62R, "Retroactive reinsurance is defined as reinsurance in which a reinsurer agrees to reimburse a ceding entity for liabilities incurred as a result of past insurable events covered under contracts subject to the reinsurance." Note that there are exceptions for property/casualty run-off agreements whereby the entire risk for a line of business or segment (e.g., asbestos liabilities) is retroactively transferred by a ceding company to a reinsurer. We will not get into the specifics in this publication, but note that the accounting for this type of contract can be found in paragraphs 81-84 of SSAP No. 62R.

[55] SSAP No. 62R, paragraph 29.

Schedule F, Part 3 is used to derive the provision for reinsurance. Effective with the 2018 Annual Statement, numerous individual parts used to derive the provision for reinsurance were consolidated into a single new Part 3 within Schedule F. This "eliminates duplication, promotes consistency of the reported ceded transactions, provides for greater automation, and reduces filing errors."[56]

The following illustrates how the amounts in the balance sheet map to those in Schedule F using the 2018 Annual Statement for Fictitious Insurance Company[57]:

TABLE 21

Company:	Fictitious Insurance Company
Annual Statement for the year:	2018

Assets, page 2			Schedule F Source				
Line	Item	Current Year	Part	Column	Item	Row	Amount
16.1	Amounts recoverable from reinsurers	426,000	3	7 + 8 (and 43)	Reinsurance recoverable on paid losses and paid LAE	Totals	426

Liabilities, Surplus and Other Funds, page 3			Schedule F Source				
Line	Item	Current Year	Part	Column	Item	Row	Amount
2.	Reinsurance payable on paid losses and loss adjustment expenses	–	1	6	Reinsurance on paid losses and loss adjustment expenses	Totals	–
9.	Unearned premiums for ceded reinsurance (parenthetical amount)	920,000	3	13	Reinsurance recoverable on unearned premium	Totals	920
12.	Ceded reinsurance premiums payable (net of ceding commissions)	440,000	3	17	Ceded reinsurance balances payable	Totals	440
13.	Funds held by company under reinsurance treaties	170,000	3	20	Funds held by Company under reinsurance treaties	Totals	170
16.	Provision for reinsurance	283,000	3	78	Provision for reinsurance	Totals	283,000

While relevant, Parts 2 and 4 through 6 tend to get less attention by actuaries. As the name suggests, Schedule F, Part 2 provides the user with a detailed listing of all portfolio reinsurance transactions entered into or canceled during the current year.

[56] NAIC Banks (E) Working Group, Agenda Item # 2016-35BWG MOD, https://www.naic.org/documents/cmte_e_app_blanks_related_adopted_mods_2016-35BWG_Modified.pdf, page 57.

[57] In gaining an understanding of the interplay between the Financial Statements and various Schedules within the Annual Statement, it is important to remember that the amounts in Schedule F, Parts 1 and 3 are displayed in thousands of U.S. dollars, whereas amounts on the balance sheet, as well as in Schedule F, Part 6, are in whole dollars.

Schedule F, Part 4 provides a listing of issuing or conforming banks for letters of credit as collateral reported in Schedule F, Part 3, column 22.

Schedule F, Part 5 provides interrogatories for Schedule F, Part 3. The interrogatories include two tables with more detailed information. The first identifies the five largest commission rates included in the cedant's reinsurance treaties for those contracts where ceded premium is in excess of $50,000[58]. The second table identifies the five largest reinsurance recoverables reported in column 15 and associated ceded premiums, as well as an indicator as to whether the reinsurer is affiliated with the reporting entity.

Schedule F, Part 6 provides a summarized form of the balance sheet with adjustments to restate it on a gross of ceded reinsurance basis. The assets are adjusted to remove any expected recoverables from the company's reinsurer, while the liabilities are restated to remove any anticipated recoveries or payables.

Given the limited level of focus on Parts 2 and 4 through 6 by property/casualty actuaries, we will provide only a brief description of their contents and use. We will devote the majority of this chapter on the contents of the other parts of Schedule F, including the calculation of the provision for reinsurance in Part 3.

SCHEDULE F – PART 1: ASSUMED REINSURANCE AS OF DECEMBER 31, CURRENT YEAR ($000 OMITTED)

Overview

Part 1 provides the total amount of the insurance company's assumed reinsurance balances by reinsured. It enables the user to obtain an additional understanding of the amounts at stake and risks associated with an insurance company's assumed reinsurance transactions as of the current year.

With Part 1, each reinsured is separated into the following groups or categories, with subtotals at the end of each category and group:

- Affiliated Insurers:
    - U.S. Intercompany Pooling
    - U.S. Non-Pool - Captive
    - U.S. Non-Pool - Other
    - Other (Non-U.S.) – Captive
    - Other (Non-U.S.) – Other
- Other U.S. Unaffiliated Insurers
- Pools and Associations:
    - Mandatory Pools, Associations or Other Similar Facilities

[58] According to the NAIC Annual Statement Instructions, the five largest should exclude mandatory pools and joint underwriting associations.

    - Voluntary Pools, Associations or Other Similar Facilities
- Other Non-U.S. Insurers

Knowledge of the group or category the reinsured is in, as well as the name of the reinsured, provides the user of the Annual Statement with further insight as to the risk associated with the assumed transaction.[59] For example, the reporting entity may have less control over and knowledge of the risks assumed from an unaffiliated non-U.S. insurer than it would of risks assumed from a U.S. affiliate.

In terms of its structure, the first four columns of Part 1 provide the ID number, NAIC company code, name of the reinsured and the reinsured's domiciliary jurisdiction. The ID number is one of the following, as appropriate:

- Federal Employer Identification Number (FEIN)
- Alien Insurer Identification Number (AIIN)
- Certified Reinsurer Identification Number (CRIN)
- Pool/Association Identification Number

The remaining 11 columns provide the dollar amounts pertaining to the assumed reinsurance transactions, including premiums, loss and LAE liabilities, contingent commissions, and the type of collateral required by the ceding company to secure balances owed to it by the reporting entity.

Premiums

The amount of written premium assumed by the insurance company from the reinsurer during the year is shown in column 5. The totals in column 5 ($000 omitted) will reconcile to the sum of the totals in columns 2 (reinsurance assumed from affiliates) and 3 (reinsurance assumed from non-affiliates) in Part 1B of the Underwriting and Investment Exhibit (shown in whole dollars).

Assumed premiums receivable, less commissions payable, are shown in column 10. The amount of commissions payable does not include contingent commissions, which are shown in column 9 and discussed below. The amount considered in column 10 is for fixed commissions. For example, if the reporting entity wrote a reinsurance contract for premium of $500,000 with a fixed ceding commission of 25%, all of which was unpaid at the end of the year, the figure in column 10 would be the $500,000 of assumed premium receivable less $125,000 of commissions payable, for a total of $375,000.

[59] Reinsurance assumed from pools and associations is generally reported by the name of the pool or association. As a result, it is difficult to gain insight about the underlying risks of the pool(s) and/or association(s) that the insurer participates in from Schedule F alone.

The total in column 10 ($000 omitted) is included as a part of agent's balances in line 15 (premiums and considerations) of page 2. As we will see later, this is considered in the profit calculation in the IEE.

Unearned premium on assumed business is provided in column 11. This is a liability to the insurance company and is included within line 9 of page 3, entitled unearned premiums, as well as the unearned premium reserves contained in Parts 1 and 1A of the Underwriting and Investment Exhibit. The unearned premium reserves on page 3 and in the Underwriting and Investment Exhibit are net of reinsurance. As such, the assumed unearned premium reserves listed in column 11 of Schedule F, Part 1 make up only one piece of these net amounts.

The amount in column 11 ($000 omitted) should reconcile directly to item (1) within the "Reinsurance" note of the "Notes to Financial Statements" titled "Reinsurance Assumed and Ceded" (shown in whole dollars; Notes 23C of Fictitious' 2018 Annual Statement).

Loss and LAE liabilities

Known liabilities owed by the reporting entity (i.e., the insurance company) to the reinsured (i.e., ceding company) as of December 31 of the current year are displayed in columns 6 and 7, with column 8 being the sum of the two.

- Column 6 (reinsurance recoverable on paid losses and LAE) represents losses and LAE that the ceding company has already paid but for which the insurance company has yet to pay to the reinsured.
- Column 7 (reinsurance recoverable on known case losses and LAE) represents the amount of losses and LAE reported by the ceding company as case reserves for which the reporting entity has included in its direct plus assumed case reserves stated on Schedule P, Part 1 and its net loss and LAE reserves stated on page 3 of the balance sheet.[60]

The above information is valuable to the actuary in assessing the reasonableness of unpaid claims. The actuary can reconcile the case reserves relied upon in the actuarial analysis to Schedule F, Part 3 and determine where the ceded loss reserves are coming from. However, Part 1 does not provide assumed IBNR. While a ceding company may report IBNR figures to its reinsurer, the reinsurer is responsible for estimating and recording assumed IBNR.

As shown in Table 21, the total in column 6 (reinsurance recoverable on paid losses and LAE; $000 omitted) reconciles to the amount on page 3, line 2 (reinsurance payable on paid losses and LAE, displayed in whole dollars). However, the total in column 7 ($000 omitted) does not reconcile directly to any exhibits or schedules within the Annual Statement. Known case reserves for losses are a part of the reported losses included in column 2 of the Underwriting

[60] This is only true for those companies that do not participate in intercompany pooling. A discussion of the treatment of intercompany pooling in Schedule P is provided in Chapter 15. Schedule P of this publication.

and Investment Exhibit, Part 2A; however, LAE would need to be added to this balance to reconcile to the amount in Schedule F, Part 1, column 7.

Contingent commissions

Column 9 provides a listing of contingent commissions payable. Reinsurers pay ceding companies a commission for the premium income generated under the reinsurance contract. Contingent commissions payable represent profit commissions generated from assumed reinsurance contracts that have yet to be paid as they are "contingent" on the profitability of the underlying reinsurance arrangement. The total amount listed in column 9 ($000 omitted) is included within the amount on page 3, line 4, entitled Commissions payable, contingent commissions and other similar charges. The amount in column 9 ($000 omitted) should reconcile to item (2) within the "Reinsurance" note of the "Notes to Financial Statements" titled "Reinsurance Assumed and Ceded" (Note 23C of the 2018 Annual Statement), which provides the amount of additional or return commission contingent upon loss experience or other forms of profit-sharing arrangement as a result of existing contracts (shown in whole dollars).

Let's go back to the example we used in our explanation of column 10 (assumed premiums receivable), but this time, let's assume that the 25% ceding commission is on a one-to-one sliding scale basis instead of being fixed. The 25% ceding commission assumes a 75% loss ratio. If the loss ratio is worse than expected and ends up being 80%, then the ceding commission drops to 20%. If the loss ratio turns out to be better than expected and is 65%, for example, then the ceding commission increases by 10 points to 35%.

The amount of assumed premium receivable in column 10 would be $500,000, and the contingent commissions payable in column 9 would be $125,000, which is the amount of expected commission at the onset of the contract. Let's fast-forward to the end of the following year and assume that the $500,000 in premium was paid by the ceding company (reinsured) to the reporting entity (reinsurer), and the $125,000 in ceding commission was paid by the reporting entity to the ceding company. However, based on actual loss experience to date, the reporting entity now knows that the loss ratio is 65% as opposed to the 75% originally expected. This means that the reporting entity will owe the ceding company 10 more points of commission, or $50,000. The $50,000 would be shown in column 9 as a positive number and is a liability to the reporting entity. Of course, since the $500,000 in premium has already been received by the reporting entity, the amount shown in column 10 would be $0.

Security

The remaining columns of Schedule F, Part 1 (columns 12 through 15) provide forms of security that ceding companies often require of their reinsurers to avoid credit risk or an insolvency problem with the reinsurer.

Funds held

Funds held by or deposited with reinsured companies (column 12) represent an asset to the reinsurance company and a liability to the ceding company. It represents a provision within a reinsurance contract under which a portion of the premium due to the reinsurer is withheld by the ceding company to pay claims. There is usually a limit to the funds-held balance; however, it is replenished as (or when) it is absorbed.

Not only do the funds held reduce credit risk, but they also serve to reduce the administrative burden of the reinsured having to go to the reinsurance company to collect each time it makes a loss payment. This provision is often beneficial to the reinsurer as the funds withheld are credited for interest, the rate of which is determined in the contract. Given the benefit, this is one provision that is considered in the evaluation of whether a reinsurance contract transfers underwriting risk.

Letters of credit

The dollar amount underlying any letters of credit that the reporting entity is required to post to benefit the reinsured is shown in column 13. Letters of credit are issued by a bank in favor of the reinsured in the event that the reinsurer is unable to meet its obligations. Reinsureds tend to favor this form of credit because it is not part of the estate of an insolvent reinsurer and therefore not tied up or subject to degradation in bankruptcy or liquidation proceedings. However, letters of credit can be very costly to the reinsurer. First, banks charge the reinsurer a fee, and this fee can be very high in uncertain economic times, as experienced during 2008 and several years thereafter. Second, letters of credit serve as a reduction to the reinsurer's line of credit with a bank and therefore reduce the amount of collateralization available on its debt obligations.

Amount of assets pledged or collateral held in trust

Broadly speaking, these are amounts not otherwise included within the funds-held provision. Unlike the other two types of security (funds held and letters of credit), these assets or collateral amounts are under the control of the reinsurer.

As we will see in Schedule F, Part 3, the funds-held provision and letters of credit serve to reduce a ceding company's provision for reinsurance.

Schedule F – Part 1 for Fictitious Insurance Company

Because Fictitious Insurance Company does not have any assumed reinsurance, these balances are $0 within Fictitious' 2018 Annual Statement. However, a reconciliation of these balances could be made within the Annual Statement for another company on the Exam 6 U.S. Syllabus.

SCHEDULE F – PART 2: PREMIUM PORTFOLIO REINSURANCE EFFECTED OR (CANCELED) DURING CURRENT YEAR

Overview

Part 2 provides a detailed listing of portfolio reinsurance transactions effected or canceled during the current year. Portfolio reinsurance is the transfer of policies in force or liabilities remaining on a block of the insurance company's business. Companies tend to enter into these arrangements when they:

- Want to discontinue writing a certain business
- Would like to get the risk or uncertainty associated with the liabilities off of their books
- Need surplus relief, which can come in the form of the discounted premium

However, these transactions come at a price, as the reinsurer will require a risk premium; the benefit of these contracts must be weighed with the cost.

Schedule F – Part 2 for Fictitious Insurance Company

Fictitious Insurance Company neither effected nor canceled any portfolio reinsurance during 2018.

SCHEDULE F – PART 3: CEDED REINSURANCE AS OF DECEMBER 31, CURRENT YEAR ($000 OMITTED)

Overview

Part 3 is one of the most referenced parts within Schedule F. Part 3 provides a comprehensive listing of the company's ceded reinsurance balances by reinsurer. It shows the dollar amounts relating to ceded reinsurance contracts, which enable the user to identify amounts recoverable from each of the company's reinsurers and assess credit risk.

Each reinsurer in Part 3 is separated into the same groups and categories as Part 1, with the addition of protected cells.[61] However, these groups and categories are provided separately for authorized reinsurers, unauthorized reinsurers and certified reinsurers,[62] with subtotals

[61] A protected cell company is one that is organized for the creation of separate cells, each having its own assets and liabilities, but also having access to a part of the company's overall capital. The liability to each cell is limited such that creditors to one cell cannot look to another cell or the company as a whole for assets. Only certain jurisdictions currently have insurance legislation pertaining to protected cell companies.

[62] An authorized reinsurer is one that is licensed or approved to transact insurance business in a jurisdiction; an unauthorized reinsurer is not. A certified reinsurer is an assuming insurer that has been certified as a reinsurer in the domiciliary state of the ceding insurer and secures its obligations in accordance with the requirements of Appendix A-785, Credit for Reinsurance, of the NAIC Accounting Practices and Procedures Manual.

for each. As we shall see, the categorization of authorized, unauthorized and certified is used in the calculation of the provision for reinsurance, which culminates in column 78.

Schedule F, Part 3, is separated into 5 "sections":

- The first 20 columns detail the ceded reinsurance balances
- Columns 21 through 36 calculate credit risk on ceded reinsurance
- Columns 37 through 53 provide the aging of ceded reinsurance
- Columns 54 through 69 provide the calculation of the Provision for Reinsurance for Certified Reinsurance
- Columns 70 through 78 provide the Total Provision for Reinsurance (authorized, unauthorized and total)

Ceded Reinsurance Balances (the first 20 columns of Part 3)

Similar to Part 1, Part 3 starts off with a listing of the ID Number, NAIC Company Code, name of each of the Company's reinsurers (reinsured in Part 1), and the domiciliary jurisdiction of each reinsurer (reinsured in Part 1).

Special Code

Column 5 of Schedule F, Part 3, is used to identify reinsurance relationships of heightened importance to regulators or those where special considerations are made in the calculation of the provision for unauthorized reinsurance. A specifically defined number code is indicated in the applicable row for situations outlined below.

Special Code "2" - Cessions of 75% or more of subject premium

By definition, an insurance company is a risk-bearing entity. When an insurance company decides to cede most, if not all, of the risk under a contract, regulators need to understand why an insurer writes business and then cedes a large portion of it to another insurer. Column 5 identifies, through an indicator of the number 2 in the relevant row, each individual reinsurance contract whereby 75% or more of the subject direct written premiums are ceded. The purpose of column 5 is to identify situations where the reporting entity may be acting as a fronting carrier for another company (the reinsurer) in a particular state where the reinsurer is not licensed to transact business. Regulatory concern is that the reinsurer is using the fronting company to avoid regulatory oversight.

We often see this in the case of workers' compensation insurance due to the strict licensing requirements. For example, Insurer A may wish to write workers' compensation for a retail organization with locations along the west coast of the U.S. However, Insurer A may not be licensed to write workers' compensation insurance in California. Insurer A may turn to Insurer B, which is licensed in California, to write the

policy on Insurer A's behalf. In turn, Insurer B would cede 100% of the exposure to Insurer A. Insurer B would require a fronting fee to provide this service to Insurer A.

Certain reinsurance transactions are exempt from this requirement, as they are not fronting arrangements and their purpose is not to avoid regulatory oversight. These transactions include:

- Intercompany cessions with affiliates, as these are used to share risks across related companies
- Cessions to a group, association, pool or organization of insurers that underwrite jointly and are subject to examination by any state regulatory authority or that operate pursuant to any state or federal statutory or administrative authorization, such as a workers' compensation or auto assigned risk pool
- Those where the gross annual premium ceded is less than 5% of policyholder surplus, as these transactions are deemed immaterial and may represent situations where an insurance company is exiting a line of business as opposed to a fronting arrangement
- Cessions to captive insurance companies, which are regulated in their domiciliary state (captive insurance companies are used by parent companies (non-insurance) to keep commercial insurance costs down)

Special Code "3" – Counterparty Reporting Exception for Asbestos and Pollution Contracts under SSAP No. 62R – Property Casualty Reinsurance

Special Code "3" identifies those reinsurers that have been aggregated into one line in Schedule F in accordance with the counterparty reporting exception for asbestos and pollution contracts under SSAP No. 62R paragraphs 66 through 68. This exception allows the Provision for Reinsurance to be reduced by reflecting that amounts have been recovered by the reporting entity under duplicate coverage provided by the retroactive contract, and that inuring balances from the original contract(s) are payable by the retroactive counterparty, if applicable. In order for this exception to be employed, the agreement must comply with paragraphs 66.a. through 66.e. and the reporting entity must obtain prior approval by its domiciliary regulator.

If this exception is employed, the reporting entity must complete the Supplemental Schedule for Reinsurance Counterparty Reporting Exception – Asbestos and Pollution Contracts.

Note that this exception only applies to the calculation of the Provision for Reinsurance and how these contracts are presented in Schedule F. It does not change the treatment of retroactive reinsurance accounting.

> Special Code "4" – Incurred but not Reported Losses on Contracts in Force Prior to July 1, 1984 that are Exempt from the Statutory Provision for Unauthorized Reinsurance
>
> IBNR losses on contracts in force prior to July 1, 1984 and not subsequently renewed are exempt from the statutory provision for unauthorized reinsurance. These contracts are identified by a 4 in this column with details of amounts provided in Part 2, Question 17, of the General Interrogatories to enable the reader to assess significance.

Many of the columns in the first section (the first 20 columns) of Schedule F, Part 3, are mirror images (albeit with different column numbers) to the corresponding contents of Part 1 for assumed reinsurance and pertain to premiums ceded, reinsurance recoverable, reinsurance payable and funds held by the reporting entity. In our discussion of the remaining columns of Part 3, we provide parenthetical references to amounts in Schedule F of Fictitious Insurance Company's 2018 Annual Statement where applicable.

Premiums ceded

The amount of written premium that is ceded to each of the company's reinsurers during the year is shown in column 6. The total amount in column 6 ($1,882; $000 omitted) should reconcile to the total of columns 4 plus 5 in Part 1B of the Underwriting and Investment Exhibit (shown in whole dollars).

Reinsurance recoverable

Columns 7 and 8 provide recoverables on paid losses and LAE ($426; $000 omitted). These are booked as an asset on the insurance company's balance sheet ($426,000 on page 2, line 16.1) because the company is awaiting receipt of a recovery from its reinsurer on payments that the insurance company already made to the claimant.

Columns 9 through 12 provide recoverable on unpaid loss and LAE. The totals of column 9 ($5,343; $000 omitted) will reconcile to the Underwriting and Investment, Part 2A, column 3 (shown in whole dollars). The totals of column 11 ($4,038; $000 omitted) will reconcile to the Underwriting and Investment, Part 2A, column 7 (shown in whole dollars).

For companies that do not participate in intercompany pooling, Schedule F, Part 3, columns 9 through 12 are equal to the amount of ceded reserves that are netted against the gross loss and LAE reserves, which result in the net loss and loss adjustment expense reserves shown on page 3 of the balance sheet in rows 1 plus 3. Columns 9 through 12 should also reconcile to the sum of the totals in columns 14, 16, 18, 20 and 22 of Schedule P, Part 1 – Summary as follows:

- The totals in Schedule F, Part 3, columns 9 and 11 ($5,343 and $4,038) should reconcile directly to the total amounts in Schedule P, Part 1, columns 14 and 16 ($5,343 and $4,038), respectively.[63]
- Similarly, Schedule F, Part 3, column 10 ($258) should reconcile to Schedule P – Part 1, column 18 ($258), since the NAIC Annual Statement Instructions require column 10 of Schedule F, Part 3 to exclude Adjusting and Other expenses.
- The total in Schedule F, Part 3, column 12 ($503) should reconcile to the sum of the totals in columns 20 and 22 of Schedule P, Part 1 ($503).[64]

Even if the company does participate in intercompany pooling, the recoverables on known case and IBNR loss reserves should match columns 3 (reported losses recoverable from authorized, unauthorized and certified reinsurers) and 7 (IBNR losses on reinsurance ceded) of the Underwriting and investment Exhibit Part 2A.

Note that Part 3 provides IBNR reserves, as these are amounts determined and recorded by the reporting entity. Recall that Part 1 does not provide IBNR. Part 1 provides case reserve amounts reported by the assuming company from the ceding company. While the ceding company may report IBNR to the assuming company, it is the assuming company's responsibility to book what it believes to be its best estimate.

Column 13 represents the amount of unearned premium that will be ceded to an insurance company's reinsurers ($920; $000 omitted). This should equal to the parenthetical amount on page 3, line 9 of the balance sheet ($920,000), which provides the reduction to gross unearned premium for the amount ceded. This is a contra liability to the ceding company. It should also reconcile directly to the amount in item (1) within the "Reinsurance" note of the Notes to Financial Statements titled "Reinsurance Assumed and Ceded" (shown in whole dollars; Note 23C of the 2018 Annual Statement).

Column 14 is similar to Schedule F, Part 1, column 9 (contingent commissions payable), but column 14 is from the view point of the reporting entity as a ceding company (reinsured) as opposed to the reporting entity as the reinsurer. Schedule F, Part 3, column 14 represents the amount of contingent commissions receivable from the reporting entity's reinsurers. The amount in column 14 ($11; $000 omitted) should reconcile to item (2) within the "Reinsurance" note of the Notes to Financial Statements titled "Reinsurance Assumed and Ceded" (shown in whole dollars; Note 23C of the 2018 Annual Statement), which provides the amount of additional or return commission contingent upon loss experience or other forms of profit-sharing arrangement under the reporting entity's existing reinsurance contracts. In the case of Fictitious, this amount is positive, which means that Fictitious expects to receive

[63] Any differences are due to rounding within the Annual Statement for Fictitious Insurance Company.
[64] ibid.

additional commission from the companies it cedes business to (specifically Good Reinsurer and Slightly Overdue Reinsurer) as a result of favorable loss experience. However, the amount can also be negative, which would mean that the reinsurer's experience has been worse than anticipated under the contract and the reporting entity is expected to return some of the commission already received.

Column 15 provides a sum of reinsurance recoverables, whether on paid (an asset) or unpaid losses (a reduction to liabilities), a reduction to unearned premiums, or contingent commissions receivable. Column 16 identifies amounts in dispute that are included in column 15. Amounts in dispute are those for which the reinsurer has disputed amounts due through formal written notification, arbitration or litigation.

Reinsurance payable

Columns 17 and 18 provide other amounts payable by the insurance company to the reinsurer. All other commissions receivable that are not included in column 14 are netted with ceded balances payable in column 17. Column 17 ($440; $000 omitted) should reconcile to page 3, line 12, "Ceded reinsurance premiums payable (net of ceding commissions) ($440,000). Amounts in column 18 ($0) represent miscellaneous liabilities owed to the reinsurer under the ceded contracts, excluding funds held by the company under the terms of the contracts with its reinsurers. Funds held are provided for separately in column 20.

Column 19 ($11,061; $000 omitted) represents the net amount recoverable from reinsurers and is equal to column 15 reduced by columns 17 and 18.

Funds held

Column 20 provides the liability for funds held by company under reinsurance treaties ($170; $000 omitted) and reconciles to page 3, line 13 ($170,000). This provision is the mirror image of that reported by the reinsurer in a transaction, as described in Part 1. It is used by the reporting entity to protect balances due from the reinsurer under the terms of the reinsurance contract. As we will see in the remainder of Schedule F, Part 3, the liability for funds held enables the insurance company to mitigate its liability for unauthorized, certified and overdue authorized reinsurance.

Credit Risk on Ceded Reinsurance (columns 21 through 36)

This section of Part 3 is new in 2018. The information reported in this section is not only used in the calculation of the provision for reinsurance, but it is also used in the calculation of the credit risk charge for reinsurance recoverables for RBC purposes. The calculation is performed on reinsurance balances receivable on reinsurance ceded to non-affiliated companies. Cessions to state mandated residual market mechanisms, the National Council on Compensation Insurance, Federal Insurance Programs (e.g., National Flood Insurance

Program), and U.S. parents, subsidiaries and affiliates are exempt from this charge and therefore excluded from the calculation.

The amount of the credit risk charge is dependent upon whether the reinsurance recoverables are collateralized or not and the financial strength of the reinsurers. Therefore, the credit risk charge is calculated separately for collateralized and uncollateralized recoverables in columns 35 and 36, respectively.

The financial strength of the reinsurers is determined based on the current rating received from an approved rating agency as outlined in the table below taken from the 2018 NAIC Annual Statement Instructions.

TABLE 22

	Reinsurer Designation Equivalent Category						
Code	1	2	3	4	5	6	7
Description	Secure 1	Secure 2	Secure 3	Secure 4	Secure 5	Vulnerable 6 or Unrated Unauthorized Reinsurers	Unrated Authorized Reinsurers
Best	A++	A+	A	A-	B++, B+	B, B-, C++, C+, C, C-, D, E, F	.....
S&P	AAA	AA+, AA, AA-	A+, A	A-	BBB+, BBB, BBB-	BB+, BB, BB-, B+, B, B-, CCC, CC, C, D, R	.....
Moody's	Aaa	Aa1, Aa2, Aa3	A1, A2	A3	Baa1, Baa2, Baa3	Ba1, Ba2, Ba3, B1, B2, B3, Caa, Ca, C	.....
Fitch	AAA	AA+, AA, AA-	A+, A	A-	BBB+, BBB, BBB-	BB+, BB, BB-, B+, B, B-, CCC, CC, C, D, R	.....

Table 22 provides a mapping of the current financial strength rating to an equivalent designation category used for purposes of applying the applicable credit risk-based capital charge for collateralized and uncollateralized recoverables as provided in Tables 23 and 24 below from the 2018 Annual Statement Instructions. The equivalent designation category is provided in column 34 of Part 3 (Reinsurance Designation Equivalent).

TABLE 23

Credit Risk Charge on Collateralized Recoverables

Code	1	2	3	4	5	6	7
Factor	3.6%	4.1%	4.8%	5.0%	5.0%	5.0%	5.0%

TABLE 24

Credit Risk Charge on Uncollateralized Recoverables

Code	1	2	3	4	5	6	7
Factor	3.6%	4.1%	4.8%	5.3%	7.1%	14.0%	10.0%

The calculation of credit risk for RBC purposes is offset by the liability that has been established for purposes of the reinsurance penalty (Provision for Reinsurance) in the Annual Statement (Page 3, Line 16). Therefore, before application of the credit risk charge, the reinsurance recoverables in column 15 are reduced by the Schedule F penalty provided in column 27 (equal to the Provision for Reinsurance in column 78) to produce column 28, the total amount recoverable from reinsurers less any applicable reinsurance penalty. Column 28 is multiplied by 120% to stress the recoverable in column 29. The total of reinsurance payable and funds held (total of columns 17 plus 18 plus 20, but not in excess of the stressed recoverable in column 29) are applied as offsets to arrive at the stressed net recoverable in column 31. Based on the Reinsurer Designation Equivalent in column 34, the credit risk charge on uncollateralized recoverables (provided in Table 24) is applied to the stressed net recoverable net of collateral offsets provided in column 33 to arrive at the credit risk on uncollateralized recoverables in column 36. Credit risk on collateralized recoverables in column 35 is determined by applying the credit risk charge on collateralized recoverables (provided in Table 23) to total collateral in column 32 (columns 21 plus 22 plus 24, not in excess of the stressed net recoverable in column 31).

Note for purposes of calculating the reinsurance credit risk charge, reinsurance recoverables are reduced by IBNR for reinsurers with Special Code "4" indicated in column 5. Recall, Special Code "4" designates those reinsurers with IBNR loses on contracts in force prior to July 1, 1984 that are exempt from the Provision for Reinsurance.

Aging of Ceded Reinsurance (columns 37 through 53)

Columns 37 through 53 of Part 3 comprise the section on the "Aging of Ceded Reinsurance" This section provides a breakdown by age of the paid loss and LAE amounts recoverable from the insurance company's reinsurers that are shown in columns 7 (reinsurance recoverable on paid loss) and 8 (reinsurance recoverable on paid LAE) of Schedule F, Part 3.

Paid loss and LAE recoverables are provided in the following age categories:

- Current (column 37)
- 1 to 29 days (column 38)
- 30 to 90 days (column 39)
- 91 to 120 days (column 40)
- Over 120 days (column 41)

The total amount of paid loss and LAE recoverable that is overdue (columns 38 through 41) is provided in column 42. The total amount of paid loss and LAE recoverable that is due (current in column 37 plus overdue in column 42) is provided in column 43. The amount in column 43 ($426 in total; $000 omitted) reconciles to the amount in column 7 (recoverable on paid loss) plus column 8 (recoverable on paid LAE) in Schedule F, Part 3 ($426 + $0 = $426 in total; $000 omitted) and Page 2, line 16.1 (amounts recoverable from reinsurers; $426,000) of the Annual Statement. As stated previously, paid loss and LAE recoverables are assets of the reporting entity.

According to the NAIC Annual Statement Instructions, the age of the recoverable is based on the following:

- The terms of the reinsurance contract as to when claims are to be paid by the reinsurer, if specified
- The terms of the reinsurance contract as to when claims are to be reported by the insurance company to the reinsurer, if specified
  Or
- The date when the amount recoverable exceeds $50,000 for a particular reinsurer and is entered in the insurance company's financial accounts as a paid recoverable

If the amount recoverable is less than $50,000, and the aforementioned paid/reported dates are not specified in the contract, then the recoverable is reported in column 37 as currently due.

Note that recoverables from mandatory pools and associations are reported in column 37 as currently due.

Columns 49 through 50 provide percentages of the overdue balances to total amounts due. Column 49 provides the percentage overdue relative to the total due (column 42 divided by column 43), column 50 provides the percentage overdue greater than 90 days and not in dispute (column 47 divided by columns 46 plus 48), and column 51 provides the percentage overdue greater than 120 days to the total due (column 41 divided by column 43). These percentages are used in the calculation of the provision for reinsurance.

Provision for Reinsurance for Certified Reinsurance (columns 54 through 69)

In 2012, the NAIC added a third facet to the "authorized" and "unauthorized" categorization of reinsurers in Schedule F, called "certified." This resulted in the addition of a new Part 6 to Schedule F, shifting the former Parts 6 through 8 to Parts 7 through 9, respectively. In 2018, numerous individual parts used to derive the provision for reinsurance were consolidated into a single new Part 3 within Schedule F, with columns 54 through 69 being specific to certified reinsurers.

Certified reinsurers are non-U.S. reinsurers domiciled in a jurisdiction designated by the NAIC as a Qualified Jurisdiction (i.e., Bermuda, France, Germany, Ireland, Japan, Switzerland and the United Kingdom) that would have been categorized as unauthorized prior to 2012, but have applied for and attained certification from the reporting entity's domiciliary state as a certified reinsurer. A non-U.S. reinsurer that is not certified is required to post 100% collateral for its U.S. claims. Once a reinsurer is certified, it is allowed to provide a reduce amount of collateral for its U.S. claims. In attaining certification, consideration is made for the reinsurer's jurisdiction, financial position, amount of capital and surplus, regulatory history, financial strength rating(s) from[65] recognized rating agency(ies), among other factors. Once certified, the reinsurer is given a rating that ranges from 1 to 6, called the Certified Reinsurer Rating. A reinsurer with a rating of 1 is considered most secure from a financial strength perspective; a reinsurer with a rating of 6 is considered vulnerable.

The rating defines the amount of collateral that the reinsurer is required to post with the reporting entity. The more secure the certified reinsurer, the less collateral required. For example, a reinsurer with a rating of 1 is not required to post any collateral; a reinsurer with a rating of 6 is required to post 100% of total recoverable due to the reporting entity in collateral.[66] The rating and collateral are used in the calculation of the provision for reinsurance in column 77 of Schedule F, Part 3.

The obvious benefits of this new "certified" category are twofold: (1) the reporting entity does not get "penalized" as much as an unauthorized reinsurer in the provision for reinsurance, and (2) the reinsurer does not have to post as much security with the ceding company.

The provision for certified reinsurance comprises two parts, one coming from column 64 and the other from column 69. Column 64 provides the provision for reinsurance ceded to certified reinsurers due to collateral deficiency. This provision is equal to total recoverables from certified reinsurers offset by any corresponding payables (from Schedule F, Part 3, column 19) in excess of the amount of credit permitted for recoverables based on the Certified Reinsurer Rating (column 63). The amount of credit permitted is based on the amount of collateral actually posted by the reinsurer relative to the amount of collateral required based on its Certified Reinsurer Rating. For example, if a certified reinsurer has a rating of 6, then the reinsurer is required to post 100% of the recoverable in collateral. However, if the reinsurer only posts 75% of the total collateral required, then the reporting entity would record a provision for reinsurance in Section 1 equal to 25% of the recoverable.

[65] The list can be found at this link: https://content.naic.org/sites/default/files/inline-files/committees_e_reinsurance_qualified_jurisdictions_list_1.pdf, and the designation was initially effective on January 1, 2015

[66] A rating of Secure-2 requires 10%; Secure-3 requires 20%; Secure-4 requires 50%; and Secure-5 requires 75%.

The 25% represents the deficiency in collateral; 75% represents the amount of credit permitted.

Column 69 of Part 3 provides the provision for overdue reinsurance ceded to certified reinsurers. As with authorized and unauthorized reinsurers, overdue reinsurance ceded is defined as recoverable on paid losses and LAE more than 90 days overdue per columns 40 and 41.

As we will see, the provision for overdue certified reinsurers is calculated similarly to the provision for authorized reinsurance, in that the provision is greater for slow payers (i.e., those certified reinsurers where the percent of recoverables on paid losses and LAE more than 90 days overdue is 20% or more), than non-slow payers. In the case of slow payers, instead of 20% of the recoverables on paid losses and LAE, the maximum amount of the recoverables on paid losses and LAE and the net unsecured recoverable for which credit is allowed is considered. In either case, the provision is not to excess the amount of credit allowed for net recoverables per column 63.

Total Provision for Reinsurance (columns 70 through 78)

As explained in the "Overview" section of this chapter, the provision for reinsurance is a minimum reserve that is calculated under SAP to reflect an estimate of recoveries under the reporting entity's reinsurance contract(s) that it will not be able to collect. The provision is provided in column 78 and is the sum of the following three main elements:

1. Provision for authorized reinsurance in column 75, which emanates from overdue balances.
2. Provision for unauthorized reinsurance in column 76, which comprises two components, the sum of columns 71 and 72:
    - Column 71 provides the provision due to collateral deficiency.
    - Column 72 provides the provision due to overdue balances.
3. Provision for certified reinsurers in column 77, which similarly comprises two components, the sum of columns 64 and 69:
    - Column 64 provides the provision due to collateral deficiency.
    - Column 69 provides the provision due to overdue balances.

For Fictitious, the components of the provision for reinsurance are as follows:

TABLE 25

Column	Provision for Reinsurance (USD in 000)	Total
75	1. Provision for Authorized Reinsurance	46
76	2. Provision for Unauthorized Reinsurance	224
77	3. Provision for Certified Reinsurance	13
78	Total Provision for Reinsurance	283

Details underlying the computation of each of these three elements is provided below.

1. Provision for Amounts Ceded to Authorized Reinsurers in column 75

An authorized reinsurer is one that is either licensed or accredited in the ceding insurance company's state of domicile or domiciled in a state that employs standards regarding credit for reinsurance substantially similar to those of the ceding insurance company's state of domicile and is therefore regulated in the U.S. and subject to minimum capital and surplus requirements. As a result, there is less concern about the reinsurer's ability to pay unless the reinsurer is late in making payments or has disputed the ceded balance. Therefore, for authorized reinsurers, the provision for reinsurance emanates from overdue balances, including amounts in dispute.

For purposes of calculating the provision for overdue authorized reinsurance, "overdue" reinsurance is defined as the amount of paid loss and LAE recoverable over 90 days past due for reasons other than dispute between the insurance company and the reinsurer.

The provision for authorized reinsurance is equal to the sum of column 73 and 74. The provision that emanates from column 73 comprises overdue authorized reinsurance that represents less than 20% of the total recoverable on paid loss and LAE (plus amounts received by the insurance company from that reinsurer in the prior 90 days). For these reinsurers, most of the payments are less than three months late. This of course is not as great of a concern from a collectability standpoint as is the situation where the majority of the amount overdue from a reinsurer is greater than 90 days (i.e., the provision for "slow payers" derived in column 74); the likelihood of the reinsurer reimbursing the insurance company is less as time goes on.

The provision for overdue authorized reinsurance in column 73 is calculated as (1) 20% of the amount of reinsurance recoverable on paid losses and LAE more than 90 days overdue, plus (2) 20% of amounts in dispute excluded from the recoverable on paid losses and LAE more than 90 days overdue for those authorized reinsurers where the amount overdue represents less than 20% of the total. This is equal to 20% of the amount reported in column 47 plus 20% of the amount reported in column 45.

For Fictitious Insurance Company, "Good Reinsurer" and "Slightly Overdue Reinsurer" are the only authorized reinsurers for which loss and LAE payments are overdue in 2018 and for which the overdue amount represents less than 20% the total recoverable on paid, as indicated by a "YES" in column 52.

Column 74 provides the provision for what Sholom Feldblum refers to as "slow-paying" [67] authorized reinsurers (i.e., authorized reinsurers where the amount of paid loss and LAE recoverable more than 90 days overdue represents greater than or equal to 20% of the total recoverable on paid losses and LAE). Column 74 is calculated as 20% of the maximum of (1) reinsurance recoverable on all items less funds held and collateral in column 26 and (2) the amount recoverable on paid losses and LAE greater than 90 days past due in columns 40 and 41.

Similar to column 73, the provision for overdue authorized reinsurers in column 74 considers reinsurance recoverables on paid loss and LAE greater than 90 days overdue. However, column 74 also considers all recoverables from the reinsurer, less allowable offsets. We note that the reinsurance recoverables would include amounts in dispute. In column 74, the greater of all items recoverable less offsets, and paid recoverables more than 90 days due, is used in the calculation of the provision. In other words, slow payers are penalized in the calculation of the provision for authorized reinsurance.

As indicated in column 52 by a "NO", Fictitious has two slow-paying reinsurers: "Overdue Reinsurer" and "Foreign Authorized."

The following table details the first step in the calculation of the provision of authorized reinsurance for Fictitious Insurance Company, the determination of whether amounts overdue are less than 20% of total recoverables on paid losses and LAE in column 52.

[67] Feldblum, S., "Reinsurance Accounting: Schedule F," CAS Exam Study Note, April 2003, 8th Edition, page 22.

TABLE 26

Authorized Reinsurance (USD in 000)							
Do overdue amounts represent less than 20% of total recoverables on paid losses and LAE?							
Column		Good Reinsurer	Overdue Reinsurer	Slightly Overdue Reinsurer	Pooling Company	Foreign Authorized	Source
52	Do overdue amounts represent less than 20% of total recoverables on paid losses and LAE (plus amounts received in prior 90 days)?	YES	NO	YES	YES	NO	If Column 50 is less Than 20%, then "Yes" and go to Column 73, else "No" and go to Column 74
50	Percentage of Amounts More Than 90 Days Overdue Not in Dispute	0.0%	100.0%	8.3%	0.0%	23.5%	Column 47 / [Column 46 + 48]
46	Total Recoverable on Paid Losses & LAE Amounts Not in Dispute	258	10	60	-	34	Columns 43 - Column 44
47	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute	-	10	5	-	8	Columns 40 + 41 - 45
48	Amounts Received Prior 90 Days	-	-	-	-	-	Input by Company
Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses							
37	Current	248	-	54	-	26	Input by Company
38	1 - 29 days past due	10	-	-	-	-	Input by Company
39	30 - 90 days past due	-	-	5	-	-	Input by Company
40	91 - 120 days past due	-	-	5	-	8	Input by Company
41	Over 120 days past due	-	10	-	-	-	Input by Company
42	Total Overdue	10	10	10	-	8	Columns 38 + 39 + 40 + 41
43	Total Due	258	10	64	-	34	Columns 37 + 42; equals Schedule F, Part 3, Columns 7 + 8
44	Total Recoverable on Paid Losses & LAE Amounts in Dispute Included in Column 43	-	-	4	-	-	Input by Company
45	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute Included in Columns 40 & 41	-	-	-	-	-	Input by Company

Once column 52 is determined, the calculation of the provision for reinsurance for authorized reinsurance is separately determined for those overdue authorized reinsurers for which column 52 is a “yes” and those for which column 52 is a “no”, as displayed below for Fictitious.

Provision for Authorized Reinsurance (USD in 000)							
Column		Good Reinsurer	Overdue Reinsurer	Slightly Overdue Reinsurer	Pooling Company	Foreign Authorized	Source
75	Provision for Authorized Reinsurance	-	43	1	-	2	Columns 73 + 74; if less than 0, enter 0
Provision for Overdue Balances and Amounts in Dispute							
73	Provision for overdue authorized representing less than 20% of total recoverables on paids (plus amounts received in prior 90 days)	-	-	1	-	-	If Column 52 = "YES", 20% of Column 47 + 20% of Column 45; otherwise = 0
74	Provision for "slow payers" (overdue authorized representing greater than or equal to 20% of total recoverables on paids (plus amounts received in prior 90 days))	-	43	-	-	2	If Column 52 = "No", Greater of 20% of Column 26 and 20% of [Columns 40 + 41]; otherwise = 0
26	Net Recoverable Net of Funds Held & Collateral	4,137	217	2,779	617	-	Column 15 - Column 25, unless Column 5 = Special Code 4, then reduce Column 15 by Columns 11 + 12 in this calculation
15	Reinsurance Recoverable on paid, known case and IBNR loss and LAE, unearned premiums and contingent commissions	4,137	745	2,873	628	2,411	Coumns 7 through 14 Totals
25	Total Funds Held, Payables & Collateral	-	528	94	11	2,411	Minimum of [Column 15 and sum of Columns 17 + 18 + 20 + 21 + 22 + 24], unless Column 5 = Special Code 4, then reduce Column 15 by Columns 11 + 12 in this calculation
Reinsurance Payable							
17	Ceded Balances Payable	-	13	94	11	255	Input by Company
18	Other Amounts Due to Reinsurers	-	-	-	-	-	Input by Company
Funds Held							
20	Funds Held by Company Under Reinsurance Treaties	-	-	-	-	-	Input by Company
Collateral							
21	Multiple Beneficiary Trusts	-	-	-	-	-	Input by Company
22	Letters of Credit	-	515	-	-	2,500	Input by Company
24	Single Beneficiary Trusts & Other Allowable Collateral	-	-	-	-	-	Input by Company

2. Provision for unauthorized reinsurance in column 76

The provision for unauthorized reinsurance requires that the insurance company establish a liability to protect against the inability to collect on amounts due from a reinsurer not authorized or certified by the domiciliary state of the insurance company. The liability emanates from two sources:

- Collateral deficiency (column 26), which is defined as the total amount of reinsurance recoverables, including amounts in dispute, offset by funds held, payables and collateral (i.e., the unsecured recoverable in column 26); and
- Overdue balances (i.e., 20% of column 47) and amounts in dispute (20% of column 16)

To put it another way, the liability is equal to total recoverable from unauthorized reinsurers, reduced for allowable offsets only to the extent that there are no amounts in dispute or more than 90 days due (and not in dispute). Otherwise, the allowable offsets are reduced by 20% of amounts due from late payers and 20% of amounts recoverable that are in dispute. Late payers and those that dispute coverage are more likely not to pay than those unauthorized reinsurers that have a history of paying on time and where no amounts are currently in dispute. For each reinsurer, the liability is capped at the total amount of reinsurance recoverable from that reinsurer.

The Appointed Actuary comments on the collectability of reinsurance in the Statement of Actuarial Opinion. However, a large provision for reinsurance would not always mean there is a collectability issue. Just because a reinsurer is not authorized (or certified) to transact business in the company's domiciliary state doesn't mean that the reinsurer is not viable and will not pay claims owed under the terms of the reinsurance contract.

The following provides the calculation of the Provision for Unauthorized Reinsurers included in Schedule F, Part 3, column 76 of the 2018 Annual Statement for Fictitious Insurance Company.

TABLE 27

Provision for Unauthorized Reinsurance (USD in 000)							
		Reinsurer					
Column		A	B	C	D	E	Source
76	Provision for Unauthorized Reinsurance	22	75	126	-	1	Minimum of [Column 15 and sum of Columns 71 + 72]; if less than 0, enter 0
71	Provision for Reinsurance Due to Collateral Deficiency	21	75	116	-	1	Column 26
72	Provision for Reinsurance Due to Overdue Balances and Amounts in Dispute	1	0	10	-	-	Column 70 + 20% of Column 16
71	Provision for Reinsurance Due to Collateral Deficiency	21	75	116	-	1	Column 26
26	Net Recoverable Net of Funds Held & Collateral	21	75	116	-	1	Column 15 - Column 25, unless Column 5 = Special Code 4, then reduce Column 15 by Columns 11 + 12 in this calculation
5	Special Code				4		Input by Company
11	IBNR Loss Reserves	16	80	58	16	80	
12	IBNR LAE Reserves	4	22	22	4	22	
15	Reinsurance Recoverable on paid, known case and IBNR loss and LAE, unearned premiums and contingent commissions	42	171	149	35	171	Columns 7 through 14 Totals
25	Total Funds Held, Payables & Collateral	21	96	33	15	170	Minimum of [Column 15 and sum of Columns 17 + 18 + 20 + 21 + 22 + 24], unless Column 5 = Special Code 4, then reduce Column 15 by Columns 11 + 12 in this calculation
Reinsurance Payable							
17	Ceded Balances Payable	1	3	3	1	2	Input by Company
18	Other Amounts Due to Reinsurers	-	-	-	-	-	Input by Company
Funds Held							
20	Funds Held by Company Under Reinsurance Treaties	20	-	20	30	100	Input by Company

Collateral							
21	Multiple Beneficiary Trusts	-	-	10	-	-	Input by Company
22	Letters of Credit	-	93	-	-	68	Input by Company
24	Single Beneficiary Trusts & Other Allowable Collateral	-	-	-	-	-	Input by Company
72	Provision for Reinsurance Due to Overdue Balances and Amounts in Dispute	1	0	10	-	-	Column 70 + 20% of Column 16
70	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute	1	0	-	-	-	20% of Column 47
47	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute	5	1	-	-	-	Columns 40 + 41 - 45
Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses							
40	91 - 120 days past due	5	1	-	-	-	Input by Company
41	Over 120 days past due	-	-	-	-	-	Input by Company
45	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute Included in Columns 40 & 41	-	-	-	-	-	Input by Company
16	Amount in Dispute Included in Column 15	-	-	50	-	-	Input by Company

3. Provision for certified reinsurers in column 77

As discussed earlier in this chapter, the provision for certified reinsurance is calculated in a separate, dedicated section of Part 3, in columns 54 through 69, and emanates from two sources:

- Collateral deficiency (column 64), which is defined as the total amount of reinsurance recoverables, including amounts in dispute, net of reinsurance payables and the amount of credit allowed (column 19 minus column 63); and
- Overdue balances (column 69) which is calculated as the greater of 20% of recoverables on paid losses and LAE, including amounts in dispute (i.e., 20% of column 47 and 20% of column 45). For “slow payers”, the provision is modified to be at least equal to 20% of the net unsecured recoverable for which credit is allowed (column 68 = 20% * column 67 = 20% * (column 63 minus column 66)). In either case, the

provision should not exceed the amount of credit allowed for net recoverables in column 63.

The following provides the calculation of the Provision for Certified Reinsurers included in Schedule F, Part 3, column 77 of the 2018 Annual Statement for Fictitious Insurance Company.

TABLE 28

Provision for Certified Reinsurance (USD in 000)					
Column		ABC Reins LTD	DEF Reins LTD	GHI Reins LTD	Source
77	Provision for Certified Reinsurance	9	4	-	Columns 64 + 69; if less than 0, enter 0
64	Provision for Reinsurance Due to Collateral Deficiency	9	-	-	Greater of Column 19 - Column 63 and 0
69	Provision for Reinsurance Due to Overdue Balances and Amounts in Dispute	-	4	-	Greater of Columns 62 + 65 and Column 68, not to exceed Column 63
64	Provision for Reinsurance Due to Collateral Deficiency	9	-	-	Greater of Column 19 - Column 63 and 0
19	Net Amount Recoverable From Reinsurers	84	41	(6)	Columns 15 - (17 + 18)
15	Reinsurance Recoverable on paid, known case and IBNR loss and LAE, unearned premiums and contingent commissions	121	52	3	Columns 7 through 14 Totals
Reinsurance Payable					
17	Ceded Balances Payable	37	11	9	Input by Company
18	Other Amounts Due to Reinsurers	-	-	-	Input by Company
63	Amount of Credit Allowed for Net Recoverables	75	41	-	Column 57 + [Column 58 * Column 61]
57	Catastrophe Recoverables Qualifying for Collateral Deferral	-	-	-	Input by Company
58	Net Recoverables Subject to Collateral Requirements for Full Credit	84	41	(6)	Column 19 - Column 57
61	Percent Credit Allowed on Net Recoverables Subject to Collateral Requirements	89	100	-	Column 60 / Column 56, not to exceed 100%
60	Percent of Collateral Provided for Net Recoverables Subject to Collateral Requirements	17.9	151.2	-	[Columns 20 + 21 + 22 + 24] / Column 58
56	Percent Collateral Required for Full Credit (0% through 100%)	20.0	10.0	10.0	
Funds Held					
20	Funds Held by Company Under Reinsurance Treaties	-	-	-	Input by Company

Collateral					
21	Multiple Beneficiary Trusts	-	40	-	Input by Company
22	Letters of Credit	15	22	-	Input by Company
24	Single Beneficiary Trusts & Other Allowable Collateral	-	-	-	Input by Company
72	Provision for Reinsurance Due to Overdue Balances and Amounts in Dispute	-	4	-	Greater of Columns 62 + 65 and Column 68, not to exceed Column 63
62	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute	-	-	-	20% of Column 45
65	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute	-	4	-	20% of Column 47
68	20% of Amount in Column 67 (for "slow payers")	-	-	-	20% of Column 67
45	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute Included in Cols. 40 & 41	-	-	-	Input by Company
47	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute	-	20	-	Columns 40 + 41 - 45
67	Net Unsecured Recoverable for Which Credit is Allowed (for "slow payers")	-	-	-	Column 63 - Column 66, if Column 52 = "No"
66	Total Collateral Provided (for "slow payers")	-	41	-	Columns 20 + 21 + 22 + 24; not to exceed Column 63; if Column 52 = "No"
Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses					
40	91 - 120 days past due	-	20	-	Input by Company
41	Over 120 days past due	-	-	-	Input by Company
45	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute Included in Columns 40 & 41	-	-	-	Input by Company

The final provision for reinsurance in column 78 of Schedule F, Part 3, which is equal to the amount recorded in Liabilities, Surplus and Other Funds on Page 3, line 16 ($283,000) of the Annual Statement, is equal to the sum of the following three items:

TABLE 29 (same as TABLE 25)

Column	Provision for Reinsurance (USD in 000)	Total
75	1. Provision for Authorized Reinsurance	46
76	2. Provision for Unauthorized Reinsurance	224
77	3. Provision for Certified Reinsurance	13
78	Total Provision for Reinsurance	283

SCHEDULE F – PART 4: ISSUING OR CONFIRMING BANKS FOR LETTERS OF CREDIT FROM SCHEDULE F, PART 3 ($000 OMITTED)

Schedule F, Part 4 is for information purposes. It provides a listing of the issuing or confirming banks for letters of credit as collateral reported in Schedule F, Part 3, column 22. Confirming banks are those that provide a guarantee on a letter of credit such that the confirming bank will pay if the original bank issuing the letter of credit bank does not.

There are 5 columns in Part 4:

Column (1): provides the issuing or confirming bank reference number.

Column (2): identifies by a "1", "2" or "3" whether single, syndicated or multiple letters of credit, respectively, are provided as collateral. Syndicated letters of credit are those where one bank acts as an agent for a group of banks issuing the letter of credit.

Column (3): provides the American Bankers Association (ABA) Routing Number for the letter of credit issuing or confirming bank.

Column (4): provides the name of the issuing or confirming bank.

Column (5): provides the amount of the letter of credit, the sum of which should equal the total of Schedule F, Part 3, column 22.

SCHEDULE F – PART 5: INTERROGATORIES FOR SCHEDULE F, PART 3 ($000 OMITTED)

Schedule F, Part 5 provides interrogatories for Schedule F, Part 3. The interrogatories include two tables with more detailed information. These two tables are particularly relevant from a regulatory perspective.

The first table identifies the five largest commission rates included in the cedant's reinsurance treaties for those contracts where ceded premium is in excess of $50,000.[68] The top five provisional commission rates are considered in conjunction with column 14 (contingent

[68] According to the NAIC Annual Statement Instructions, the five largest should exclude mandatory pools and joint underwriting associations.

commissions receivable) and the aforementioned Note to the Financial Statements on reinsurance assumed and ceded. The purpose is to identify companies that may be using reinsurance as a means to conceal high operating leverage. As we shall see in Appendix I of this publication, one purpose of the NAIC's Insurance Regulatory Information System (IRIS) ratios is to identify companies that may be taking on more business and more risk than they can handle relative to their surplus. Specifically, IRIS Ratio 2 provides the ratio of net written premium to policyholders' surplus. Unusual values triggering regulatory attention are those in excess of 300% on a net basis. The 300% ratio on a net basis corresponds to the age-old generally accepted benchmark that insurers remain within the 3-to-1 range in terms of writings relative to surplus.

Companies growing rapidly may use reinsurance as a means to reduce pressure on its surplus. This is known as "surplus relief." All else being equal, an increase in the amount of ceded premiums will reduce the amount of net premiums and reduce the premium to surplus ratio (IRIS Ratio 2). This is perfectly legitimate; the purpose of reinsurance is to spread and manage insurance risk.

For example, consider a company that has $150 million of direct written premium and surplus of $25 million. The premium-to-surplus ratio is 600%, well above the 300% benchmark. Let's say this company decides to purchase a 30% quota share reinsurance contract with a fixed ceding commission of 35%. The company's net written premium would be:

Direct written premium * (1 – ceding percentage)
= $150 million * (1 – 0.30)
= $105 million.

At the onset of the contract, the company's surplus would grow by the amount of ceding commission:

Direct written premium * ceding percentage * ceding commission
= $150 million * 30% * 35%
= $15.75 million

The resulting surplus would be $40.75 million ($25 million current surplus plus $15.75 million in ceding commission). The purchase of this contract would reduce the company's premium-to-surplus ratio below the 300% "usual" value benchmark, from 600% to 258%.

However, consider the situation where the commission is instead offered on sliding scale basis such that a one-point increase in loss ratio from 65% would result in a one-point decrease in the 35% commission rate. The premium-to-surplus ratio at the onset of this contract would be the same as that under the situation where the commission rate is fixed (258%). However, if the actual loss ratio turns out to be 80%, then the company will have to return $6.75 million of the original $15.75 million in ceding commission. Instead of receiving 35% of ceded

premium in commission, the company (reinsured) will end up getting only 20%. If a 20% fixed commission rate was considered at the onset, the premium-to-surplus ratio would have been 309%, triggering an unusual value for IRIS Ratio 2.

Schedule F, Part 5 and the reinsurance Note to the Financial Statements identify reinsurance contracts with high provisional commission rates so that the regulator may investigate these contracts and determine if they are being used to mask high operating leverage.

We note that IRIS Ratio 4 (surplus aid to policyholders surplus) is another statistic that can identify companies that rely heavily on reinsurance for surplus relief. As explained in Appendix I of this publication, IRIS Ratio 4 provides the ratio of surplus aid to policyholders surplus. Surplus aid is the amount of surplus enhancement in the current year attributed to ceding commission (both fixed and contingent) that has been taken into income on ceded unearned premium. Ratios of surplus aid to policyholders surplus in excess of 15% are considered unusual and trigger regulatory scrutiny.

In either of our examples (with the 35% ceding commission being either fixed or provisional), IRIS Ratio 4 would be computed as 39% at the onset of the contract, well in excess of the 15% benchmark.[69] This further illustrates the company's heavy use of reinsurance as surplus relief, masking considerable growth and uncertainty in results.

The second table in Part 5 identifies the five largest reinsurance recoverables reported in column 15 and associated ceded premiums, as well as an indicator as to whether the reinsurer is affiliated with the reporting entity. This table enables the regulator to assess concentration of reinsurance credit risk.

SCHEDULE F – PART 6: RESTATEMENT OF BALANCE SHEET TO IDENTIFY NET CREDIT FOR REINSURANCE

Part 6 of Schedule F provides a summarized form of the balance sheet with adjustments to restate it on a gross of ceded reinsurance basis. That is, Part 6 provides a snapshot of the balance sheet as if the company had no reinsurance protection.

Part 6 is one page and displays the assets followed by the liabilities. Both the assets and liabilities are in a condensed format for ease of presentation and computation. There are three columns, providing balances for each of the following asset and liability line items:

Column 1: As Reported (Net of Ceded)
This provides the amounts included on page 2 of the Annual Statement, which are net of reinsurance.

Column 2: Restatement Adjustments

[69] IRIS Ratio 4 is computed as the unearned premium reserve of $45 million multiplied by the 35% ceding commission and divided by policyholders surplus of $40.75 million.

This provides the adjustments necessary to put the net amounts in column 1 on a gross of reinsurance basis in column 3.

Column 3: Restated (Gross of Ceded)
This is equal to the sum of columns 1 and 2 and shows the corresponding asset and liability figures on a gross of reinsurance basis.

Adjustments to assets

The asset side of the balance sheet is generally easier to adjust because there are fewer items that require adjustment. This is because certain items relate to direct or assumed business only, and/or certain items are not impacted by the amounts associated with a company's ceded reinsurance transactions. In general, no adjustment is made to the following asset items within Part 9:

- Cash and invested assets (line 1 of Schedule F, Part 6; line 12 of page 2), as these represent balances that the company has on hand or invested, regardless of its ceded reinsurance
- Premiums and considerations (line 2 of Schedule F, Part 6; line 15 of page 2), as these represent uncollected or deferred balances relating to direct written premiums
- Funds held by or deposited with reinsured companies (line 4 of Schedule F, Part 9; line 16.2 of page 2), as these represent balances for business assumed by the company, not ceded
- Other assets (line 5 of Schedule F, Part 6; representing the balance of page 2 not separately identified), as these represent balances that would not change regardless of ceded reinsurance balances, such as title plants, furniture and electronic data equipment
- Protected cell assets (line 7 of Schedule F, Part 6; line 27 of page 2), as these are not related to ceded reinsurance

The only two lines that are affected by the reinsurance adjustments are line 3, reinsurance recoverable on loss and loss adjustment expense payment, and line 6, net amount recoverable from reinsurers. The adjustment in line 3 is simply a reversal of the amount of reinsurance recoverable on loss and LAE such that the balance gross of reinsurance ceded is $0 for this asset. The adjustment for line 6 is a balancing item such that the total adjustments on the liabilities side of the balance sheet equal those on the asset side.

Adjustments to liabilities

With respect to the Liability side of the balance sheet, no adjustment is typically made to the following line items in Part 6:

- Taxes, expense, and other obligations (line 10 of Schedule F, Part 9; lines 4 through 8 of page 3), as these are generally applied to direct writings
- Advance premium (line 12 of Schedule F, Part 6; line 10 of page 3), as this represents balances that the company has received in advance on its direct writings
- Dividends declared and unpaid (line 13 of Schedule F, Part 6; line 11.1 and 11.2 of page 3), as dividends are not affected by the ceded reinsurance balances
- Amounts withheld or retained by company for account of others (line 16 of Schedule F, Part 6; line 14 of page 3), as these balances are not related to ceded reinsurance
- Other liabilities (line 18 of Schedule F, Part 6; representing the balance of the liabilities on page 3 not separately identified), as these are unrelated to ceded reinsurance

Adjustments are made for the following lines:

Line 9: Losses and LAE (lines 1 through 3 of page 3)
These balances are stated net on a company's statutory balance sheet. The adjustment puts the balances on a gross of reinsurance basis. For companies that are not involved in intercompany pooling arrangements, the adjustment equals the ceded case and IBNR figures from Schedule P, Part 1, Summary, total, columns 14, 16, 18, 20 and 22.

Line 11: Unearned premiums (line 9 of page 3)
These balances are stated net on a company's statutory balance sheet. The adjustment puts the balances on a gross of reinsurance basis. The source of the ceded unearned premium reserve is Schedule F, Part 3, column 13, multiplied by 1,000. The ceded balance is also provided within the parenthetical reference on the Liabilities, Surplus and Other Funds page of the Annual Statement (page 3) on line 9.

Line 14: Ceded reinsurance premiums payable (line 12 of page 3)
If ceded reinsurance is ignored, as is the purpose of Part 6, then the company will not have any ceded reinsurance premiums payable. The adjustment reverses the amount in column 1.

Line 15: Funds held by company under reinsurance treaties (line 13 of page 3)
Similarly, if there are no ceded reinsurance treaties, then the company won't have any funds held related to these treaties. The adjustment reverses the amount in column 1.

Line 17: Provision for reinsurance (line 16 of page 3)
This is the Schedule F "penalty," as computed in Schedule F, Part 3. If the company is assumed to have no reinsurance protection in Part 6, then there

will be no provision for reinsurance. The adjustment reverses the amount in column 1.

Surplus

Surplus remains unadjusted in Part 6, as such, the adjustment amount is shown as “XXX” in column 2 and the amount in column 3 equals that in column 1.

Totals

The totals shown in column 1, line 22 of Part 6, balance to the totals shown on line 38 of page 3 of the Annual Statement. The total is equal to the difference between the total assets and total liabilities of the company. This calculation follows through to column 3, with the new total being on gross of reinsurance basis.

The following provides Schedule F, Part 6 for Fictitious Insurance Company.

TABLE 30

Schedule F – Part 6
Annual Statement for the year 2018 of the Fictitious Insurance Company
Restatement of Balance Sheet to Identify Net Credit for Reinsurance

		1 As Reported (Net of Ceded)	2 Restatement Adjustments	3 Restated (Gross of Ceded)
Assets (page 2, Col. 3)				
1.	Cash and invested assets (Line 12)	87,825,000	0	87,825,000
2.	Premiums and considerations (Line 15)	7,990,000	0	7,990,000
3.	Reinsurance recoverable on loss and loss adjustment expense payments (Line 16.1)	426,000	(426,000)	0
4.	Funds held by or deposited with reinsured companies (Line 16.2)	0	0	0
5.	Other assets	3,759,000	0	3,759,000
6.	Net amount recoverable from reinsurers	0	10,595,000	10,595,000
7.	Protected cell assets (Line 27)	0	0	0
8.	Totals (Line 28)	100,000,000	10,169,000	110,169,000
Liabilities (page 3)				
9.	Losses and loss adjustment expenses (Lines 1 through 3)	51,557,000	10,142,000	61,699,000
10.	Taxes, expenses, and other obligations (Lines 4 through 8)	1,932,000	0	1,932,000
11.	Unearned premiums (Line 9)	11,895,000	920,000	12,815,000
12.	Advance premiums (Line 10)	0	0	0
13.	Dividends declared and unpaid (Lines 11.1 through 11.2)	1,562,000	0	1,562,000
14.	Ceded reinsurance premiums payable (net of ceding commissions) (Line 12)	440,000	(440,000)	0
15.	Funds held by company under reinsurance treaties (Line 13)	170,000	(170,000)	0
16.	Amounts withheld or retained by company for account of others (Line 14)	308,000	0	308,000
17.	Provision for reinsurance (Line 16)	283,000	(283,000)	0
18.	Other liabilities	829,000	0	829,000
19.	Total liabilities excluding protected cell business (Line 26)	68,976,000	10,169,000	79,145,000
20.	Protected cell liabilities (Line 27)	0	0	0
21.	Surplus as regards policyholders (Line 37)	31,024,000	0	31,024,000
22.	Totals (Line 38)	100,000,000	10,169,000	110,169,000

As displayed above, the asset items are adjusted in column 2 for:

- Reinsurance recoverable on loss and LAE payments in line 3, totaling $426,000
- The net amount recoverable from reinsurers in line 6, totaling $10,595,000

The amount in line 6, column 2, is simply a reversal of the balance shown in column 1, and therefore the asset side of the balance sheet. The amount in line 6 is computed as the "plug," such that the total adjustment to the assets in line 8 equals the total adjustment to the liabilities in line 19.

The liability items are adjusted in column 2 for:

- Loss and LAE in line 9, totaling $10,142,000
- Unearned premiums in line 11, totaling $920,000
- Ceded reinsurance premiums payable in line 14, totaling $440,000
- Funds held by company under reinsurance treaties in line 15, totaling $170,000
- Provision for reinsurance in line 17, totaling $283,000

The amount in line 9, column 2, is equal to the amount of ceded loss and LAE reserves per Schedule P, Part 1, Summary, of Fictitious' 2018 Annual Statement (sum of the totals in columns 14, 16, 18, 20 and 22).[70]

For companies that do not participate in intercompany pooling, line 9 is equal to the ceded reserve loss and LAE reserve balance in Schedule P, Part 1, Summary. However, for those that operate in an intercompany pooling arrangement, we note that Schedule P is prepared net of pooling on both a gross and net of external reinsurance basis, whereas Schedule F considers all assumed and ceded reinsurance, including intercompany pooling. As such, it makes it difficult to have full visibility into the loss and LAE reserve balances shown in column 2 of Schedule F, Part 6 for companies participating in intercompany pooling.

The amount in line 11, column 2 is equal to the amount of gross unearned premium reserves that are ceded, as displayed in the total line of Schedule F, Part 3, column 13, multiplied by 1,000.

The amounts in column 2 for lines 14, 15, and 17 represent a reversal of the amount in column 1.

As displayed above, there is no adjustment to surplus; therefore, the amount in column 1 equals that in column 3 ($31,024,000).

[70] Schedule P is prepared net of intercompany pooling on both a gross and net of external reinsurance basis, whereas Schedule F considers all assumed and ceded reinsurance, including intercompany pooling. As such, it makes it difficult to have full visibility into the loss and LAE reserve balances shown in column 2 of Schedule F, Part 6 for companies participating in intercompany pooling arrangements.

SUMMARY

As we have seen, Schedule F is not only important to actuaries in assessing net loss and LAE reserves, but it is also an important tool to the many users of the Annual Statement in solvency monitoring because it:

- Identifies the amount of gross losses that emanate from the reporting entity's assumed reinsurance transactions;
- Provides an estimate of the significance of the reporting entity's assumed and ceded reinsurance transactions to its surplus;
- Enables further inquiry into the financial strength of the reporting entity's reinsureds and reinsurers;
- Quantifies "credit risk" related to reinsurance recoverables for purposes of the NAIC's RBC formula; and
- Identifies the reporting entity's reinsurers that may require further scrutiny because they are either slow at paying claims or are not regulated.

Yet, Schedule F is only one of many tools used to monitor solvency by regulators. As we have stressed throughout this publication, no one tool can be used blindly.

Further, while Schedule F is valuable, it has received some criticism as to how well it meets the regulatory objectives of monitoring solvency for the protection of policyholders. The following are a few of those criticisms:[71]

- The provision for reinsurance is strictly formulaic, potentially masking the true estimate of uncollectible reinsurance that would be determined by company management based on their knowledge of the reinsurers and terms of each contract.
- There is no statistical, historical or actuarial basis for the formula, and its application may not adequately represent an insurer's exposure to collectability risk.
- Unauthorized reinsurance may provide more and/or higher-quality reinsurance at a lower price than a competing authorized reinsurer.
- Slow payers who are financially strong eventually pay, whereas a reinsurer that is current in its payments may not be able to withstand a stress scenario to its financials.
- The numerous calculations and detail involved in determining the provision for reinsurance can lead to a false level of precision such that the true issue of collectability risk is overlooked.
- The costs associated with collateral requirements may be passed down to the primary policy, thereby costing the policyholder more for insurance.
- The provisions within Schedule F can limit competition to the U.S. market as a result of the penalty that the European reinsurers bring given that they are unauthorized.

[71] Feldblum, S., "Reinsurance Accounting: Schedule F," April 2003, pages 40-47.

- Schedule F does not directly tell us anything about the reinsurer's solvency, which is really the source of collectability risk.

CHAPTER 15. SCHEDULE P

OVERVIEW

Schedule P is probably the most important schedule within the Annual Statement to property/casualty actuaries. Schedule P provides details underlying the recorded loss and loss adjustment expense (LAE) reserves on the reporting entity's statutory balance sheet, including 10 years of the company's historical loss and defense and cost containment (DCC) experience (i.e., net paid, case outstanding and incurred loss and DCC triangles). Because the Annual Statement is a public document, Schedule P tends to be a means for outside parties to evaluate the adequacy of recorded reserves, absent loss and LAE data provided directly by the company. And even when detailed data is provided by the company, oftentimes outside parties look to Schedule P for purposes of providing a check on the reasonableness of the recorded balances. However, there are cautions to using this information, and we have presented several within this chapter.

Schedule P has numerous other uses in addition to providing support for the recorded loss and LAE reserves. For example, Schedule P:

- Supports and provides necessary disclosures for the Statement of Actuarial Opinion, including:
    - Direct plus assumed and net loss and expense reserves
    - The amount of anticipated salvage and subrogation (S&S) that the reporting entity takes credit for in its reserves
    - The amount of tabular and non-tabular discount that the reporting entity takes credit for in its reserves
- Shows how loss reserves have developed over time and enables the reader to decipher whether development is attributed to a specific year or line of business
-
- Shows the split between a company's reserves for known claims and those actuarially determined (i.e., IBNR reserves)
- Provides historical claim count data to facilitate review of trends in claim frequency and severity, as well as changes in claims handling and reserving
- Provides information necessary to compute the loss sensitive discount in the RBC calculation

We will discuss some of these additional uses within this chapter.

ORGANIZATIONAL STRUCTURE

There are seven parts to Schedule P plus interrogatories, as described below.

Part 1 summarizes a company's loss and LAE experience as of December 31 of the current year. It displays a company's loss and LAE reserves, after adjustment for tabular discount if

applicable, and then separately shows the reserves net of all discounts (both tabular and non-tabular). These are the loss and LAE reserves that are recorded on a company's statutory balance sheet (page 3 of the Annual Statement).

For those companies that participate in intercompany pooling, Part 1 displays the pooling percentage.

Part 2 provides a historical display of a company's net ultimate loss and DCC estimates. This enables the user to see how the company's ultimate loss and DCC estimates have developed over time. In a perfect world, the company's ultimate estimate of the cost of incurred claims would remain the same at each evaluation point. However, these are estimates, and therefore have the potential to develop upward or downward as the claims mature. The information provided in Part 2 feeds into the one-year development test in the Five-Year Data Exhibit and is also used in computing the NAIC Insurance Regulatory Information System (IRIS) ratios 11, 12 and 13.

Part 3 shows a historical array of the company's net paid loss and DCC experience as of each of the past 10 years. Actuaries can use this information to project unpaid claims using methods such as the paid loss development technique.

The difference between Part 2 (ultimates) and Part 3 (paids) provides a historical array of the company's net loss and DCC reserves as of each of the past 10 years. These amounts are provided before tabular discount.

Part 4 displays a company's recorded net IBNR for loss and DCC before tabular discount. The difference between Parts 2 and 4 provides a historical array of the company's net reported loss and DCC experience as of each of the past 10 years. This information can be used by actuaries to project unpaid claims using methods such as the case incurred loss development technique.

Part 5 provides a historical array of claim counts as of each of the past 10 years, including claims closed with payment, open claims and reported claims.

Part 6 displays the earning of premium over time, separately on a direct plus assumed and ceded basis. Like the information provided in Parts 2 through 4, the earned premium data is provided in a triangular format enabling the monitoring of premium adjustments over time.

Part 7 provides loss and premium data on loss sensitive contracts, separately for primary and reinsurance contracts, for those lines of business where such contracts are written.

All dollar amounts presented in Schedule P are in thousands (i.e., 000 omitted).

Within the remaining sections of this chapter, we will provide an overview of each part of Schedule P, focusing on those of most relevance to the property/casualty actuary. We will then get into details of those parts, providing relevant examples from the 2018 Schedule P for Fictitious Insurance Company.

SCHEDULE P – PART 1

Part 1 is shown in summary format for all lines of business combined, followed by separate schedules (Parts 1A through 1T) in the same format as Part 1 – Summary, but by Schedule P line of business. The data in Part 1 is provided on a direct plus assumed (gross) and ceded basis and includes premiums earned, paid loss and LAE, case outstanding loss and DCC reserves, and IBNR for loss and LAE. Additionally, incurred loss and LAE ratios are displayed on a gross, ceded and net of reinsurance basis.

One item that is not included in Schedule P is the segregation of gross data into its direct and assumed components. Oftentimes actuaries look for this information separately in performing analyses of unpaid claims; however, it is not provided in Schedule P. As noted in Chapter 14. Schedule F, certain of this information can be provided in Schedule F, Part 1, including assumed case reserves.

Line of Business Segmentation in Part 1

Parts 1A through 1T provide the same information as in Part 1 – Summary, except separately by line of business. The line of business segmentations are as follows:

A – Homeowners/Farmowners
B – Private Passenger Auto Liability/Medical
C – Commercial Auto Liability/Medical
D – Workers' Compensation
E – Commercial Multiple Peril
F – Section 1 – Medical Professional Liability – Occurrence
F – Section 2 – Medical Professional Liability – Claims-Made
G – Special Liability (Ocean Marine, Aircraft (All Perils), Boiler & Machinery)
H – Section 1 – Other Liability – Occurrence[72]
H – Section 2 – Other Liability – Claims-Made
I – Special Property (Fire, Allied Lines, Inland Marine, Earthquake, Burglary & Theft)
J – Auto Physical Damage
K – Fidelity/Surety
L – Other (Including Credit, Accident and Health)
M – International
N – Reinsurance – Nonproportional Assumed Property[73]
O – Reinsurance – Nonproportional Assumed Liability[74]

[72] Business reported as an aggregate write-in for other lines of business in the State Page is included here (either as occurrence or claims-made, depending on the coverage written).
[73] Property includes fire, allied, ocean marine, inland marine, earthquake, group, credit and other A&H, auto physical damage, boiler and machinery, burglary and theft and international property.
[74] Liability includes farmowners, homeowners and commercial multiperil; medical professional liability workers' compensation; other liability; products liability; auto liability; aircraft (all peril); and international liability.

P – Reinsurance – Nonproportional Assumed Financial Lines[75]
R – Section 1 – Products Liability – Occurrence[76]
R – Section 2 – Products Liability – Claims-Made
S – Financial Guaranty/Mortgage Guaranty
T – Warranty

The definitions of these lines correspond to those on the Exhibit of Premiums and Losses (Statutory Page 14), with the exception of the three nonproportional reinsurance assumed lines (Parts N, O and P), which are not included in Statutory Page 14, as it provides information on a direct basis only. Nonproportional reinsurance assumed is generally excess of loss reinsurance, whereas proportional is generally a form of quota share reinsurance. Proportional reinsurance is included within its respective line(s) of business segments. For example, premiums and losses associated with assumed commercial property reinsurance under a quota share contract would be included within Schedule P, Part 1I, whereas the same risk assumed on an excess of loss basis would be included within Schedule P, Part 1N.

Only two accident years and a "prior years" row are shown for the following lines due to the limited amount of loss development beyond two years:

I – Special Property (Fire, Allied Lines, Inland Marine, Earthquake, Burglary & Theft)
J – Auto Physical Damage
K – Fidelity/Surety
L – Other (Including Credit, Accident and Health)
S – Financial Guaranty/Mortgage Guaranty
T – Warranty

That is, claims for the aforementioned lines of business are expected to be reported and paid within a relatively short period of time after the occurrence of a claim. Consider the Special Property line of business. If a commercial property is damaged due to fire, the insured will report the claim rather quickly to get the building repaired or rebuilt in order to continue operations. Payments may continue to the insured while the commercial property is being repaired due to business interruption; however, the insured will generally be back in business within the year in which the loss occurred. As a result, losses will develop for 12 to 24 months after the beginning of the accident year (January 1) in which the loss occurred, but typically the claim will be closed by the end of 24 months.

To illustrate the "bucketing" of claims, consider a complete fire loss to a paper mill on December 19, 2018. Assume the building is rebuilt and the insured is back in business on September 4, 2019. This claim would be recorded as an accident year 2018 claim, with loss

[75] Financial includes financial guaranty, fidelity, surety, credit, and international financial.
[76] There is no Part Q.

payments extending into the second year of development (24-month period) until the claim is closed on September 4.

Despite only two years being shown in the Schedule P line of business parts, all 10 years are included in Schedule P – Part 1 – Summary. Therefore, the insurer is required to retain data for these lines in a similar 10-year format as all other lines of business in Schedule P.

Many have argued that the two-year reporting convention is not necessarily appropriate for the aforementioned lines of business due to the tail on lines such as Fidelity/Surety. These opponents would vote for including all 10 years, as is shown for the other Schedule P lines, arguing further that all 10 years are already produced for purposes of forming the summaries in Schedule P.

Yearly Reporting Convention

Part 1 provides information related to earned premiums and cumulative loss and LAE data at the current evaluation date (i.e., December 31 of the current year) for the last 10 years in which premiums are earned and losses incurred. Earned premiums are shown by calendar year, and once they are entered in Schedule P, they do not change for retrospective premium adjustments or other adjustments. Losses are shown by:

- Accident year for occurrence policies
- Report year for claims-made policies
- Policy year for tail policies
- Discovery year for fidelity and surety policies

Accident year is defined as the calendar year in which accidents occur and/or losses are incurred. For example, a claim with a date of loss of November 13, 2018, would be a 2018 accident year claim. This reporting convention is used for occurrence-basis policies, where the trigger of coverage is the occurrence of a loss. With occurrence policies, a claim can be reported at any time after the loss occurs, subject to statutes of limitation, as long as the loss occurs during the policy term. For example, an injury that occurred 15 years ago can be reported to the insurer today, and any coverage for that injury would be provided by the terms and conditions of the policy that was in effect 15 years ago.

Report year represents the calendar year in which losses are reported. This is typically used for claims-made policies, as the trigger of coverage is the reporting of a claim or incident to the insurance carrier. In their most basic format, claims-made policies cover claims that are first made during the policy term. As a result, if a claim occurs during the policy period but is not reported by the insured during the policy term, the claim is not covered by the insurance company under the terms and conditions of the policy that was in force at the time the claim occurred. This significantly reduces the uncertainty for the insurance carrier, both for pricing and reserving, since the policy that is in effect at the time the claim is made will be the policy

providing the coverage for the claim, regardless of how long ago the incident took place (provided there is no retroactive date on the policy).

A claims-made policy may have a retroactive date that is before the effective date of the policy, the same as the effective date of the policy or it may have no retroactive date. The retroactive date is the date on or after which the incident must occur in order for it to be covered under the claims-made policy. An incident that occurs before the retroactive date will not be covered by the claims-made policy even if it is first reported during the policy period.

These types of policies are generally issued for medical malpractice, other liability, or products liability coverages because claims covered by these types of policies tend to have a long latency period. It becomes very difficult for insurance companies to project the claim frequency as well as the severity of claims and therefore difficult to price and reserve for an occurrence that will result in the reporting of a claim many years in the future.

To illustrate the concept of claims-made coverage and the concept of report year, assume a young surgeon purchases a medical malpractice policy on a claims-made basis for the term beginning July 1, 2018, and expiring on June 30, 2019. Assume that the surgeon performs a procedure on his patient on October 21, 2018, and complications arise during the surgery. If the surgeon reports the incident to his insurance carrier before June 30, 2019, and subsequently the surgeon is sued and a claim materializes, he will be covered under his policy in effect from July 1, 2018, through June 30, 2019. This would be a 2018 report year claim for Schedule P reporting purposes. If the surgeon does not report the incident because the patient did not become aware of the complications until a year later, and the claimant decides to sue the physician on August 22, 2019, the surgeon reports this claim to his carrier on August 23, 2019. He would not be covered by the policy in effect from July 1, 2018, through June 30, 2019, as the claim was not reported during the policy term. If the surgeon renewed the claims made policy, the renewal policy that is in effect from July 1, 2019, through June 30, 2020, would be the policy that covers the claim.

In general, the people or companies that purchase claims-made policies do not like to leave themselves exposed to the risk of being uninsured, despite the cost savings of a claims-made policy as compared to an occurrence policy. As a result, they generally purchase something called an extended reporting period or “tail coverage.” Tail coverage extends the reporting period of a claims-made policy for an additional period of time, which may be one to five years or an unlimited period of time past the expiration of the claims-made policy. A claims-made policy plus an unlimited extended reporting period essentially turns the claims-made policy into an occurrence policy. To illustrate using our previous example, let’s assume that the surgeon does not renew his claims-made policy and therefore purchases unlimited tail coverage on July 1, 2019, when the policy expires. This means that any accident or loss that occurred as a result of error by the surgeon during the period July 1, 2018, through June 30, 2019, would be a covered claim by the insurance company that issued the claims-made

policy regardless of when in the future the surgeon first reports the claim. Without the tail coverage, the surgeon would have no coverage for claims that he learns about on or after July 1, 2019.

Premiums and losses associated with tail policies are included in Schedule P with their associated line on an occurrence basis.

Discovery year is generally used for fidelity and surety policies, as it is difficult to determine the actual date the "loss" occurs. As the name suggests, discovery year represents the calendar year in which a loss or damage is discovered.

For simplicity, and because it is most common, we will use the term accident year in the remainder of our discussion of Schedule P, unless explicitly stated otherwise.

Note that there is also a prior years row in Schedule P, which accumulates loss and expense information into one row within each of the schedules. The prior years row shows paid (received) activity during the current year (i.e., calendar year activity) and ending reserves as of the evaluation date of the Statement. Within this chapter we provide examples of how to calculate the prior years row; it is a bit trickier than this brief explanation suggests.

Loss Adjustment Expenses

Losses are provided separately from LAE, which is separated into two components: DCC expenses and Adjusting and Other (A&O) expenses. DCC generally includes defense, litigation and medical cost containment expenses, whether internal or external, and A&O includes all expenses associated with adjusting and recording policy claims, other than those included with DCC.[77] The following table summarizes the types of expenses by category.

[77] Per the Official NAIC Annual Statement Instructions for 2018, DCC are defined as "those that are correlated with the loss amounts," and A&O are defined as "those expenses that are correlated with claim counts or general loss adjusting expenses."

TABLE 31

DCC	A&O
Surveillance expenses	Fees and expenses of adjusters and settling agents
Fixed amounts for medical cost containment	
Litigation management expenses (e.g., audit of bills)	
LAE for participation in voluntary and involuntary pools if reported by accident year	LAE for participation in voluntary and involuntary pools if reported by calendar year
Fees or salaries for: • Appraisers • Private investigators • Hearing representatives • Reinspectors • Fraud investigators (If working in defense of a claim)	Fees and salaries for: • Appraisers • Private investigators • Hearing representatives • Reinspectors • Fraud investigators (If working in the capacity of an adjuster)
Fees or salaries for rehabilitation nurses, if not included with losses	
Attorney fees incurred owing duty to defend, even when other coverage does not exist	Attorney fees incurred in determination of coverage, including litigation between the reporting entity and the policyholder
Cost of engaging experts	Adjustment expenses arising from claims related lawsuits, such as extra contractual obligations and bad faith lawsuits

The NAIC Instructions to the Annual Statement indicate that DCC should be assigned to accident year in accordance with the associated losses, while for A&O, "in any justifiable way, … [t]he preferred way is to apportion these expenses in proportion to the number of claims reported, closed, or outstanding each year."[78] The following table illustrates this using Fictitious' commercial automobile liability line of business as an example. Fictitious allocates its unpaid A&O for commercial automobile liability by applying the distribution of outstanding claim counts by accident year to total unpaid A&O.

[78] 2018 NAIC Annual Statement Instructions Property/Casualty, page 226.

TABLE 32

	Years in Which Premiums Were Earned and Losses Were Incurred	Number of Claims Outstanding Direct and Assumed	Distribution of Outstanding Claims	Direct and Assumed Adjusting & Other Unpaid
1.	Prior	1	1%	2
2.	2009	1	1%	2
3.	2010	1	1%	2
4.	2011	1	1%	2
5.	2012	1	1%	2
6.	2013	1	1%	2
7.	2014	2	3%	4
8.	2015	4	5%	8
9.	2016	7	9%	15
10.	2017	13	18%	27
11.	2018	42	57%	89
	Totals	74	100%	156

Disclosure of the methodology used to allocate A&O by year is required in the interrogatories to Schedule P.

LAE wasn't always segregated between DCC and A&O. Prior to 1988, LAE were stated as either allocated LAE (ALAE) and unallocated LAE (ULAE) in the Annual Statement. ALAE is defined as claim expenses that can be specifically assigned to a particular claim, and ULAE as those that cannot. ULAE is generally associated with the cost of administering claims. The terms ALAE and ULAE are still used in practice. In fact, for reserving purposes many companies perform actuarial analyses on an ALAE/ULAE basis.

Salvage and Subrogation

Most insurance policies require the insured to transfer the right to S&S recovery upon payment of a covered claim to an insured. Salvage is typically received by insurance companies in the case of automobile claims, when the vehicle incurs physical damage that is beyond repair. Here the insurance company can sell usable parts of the vehicle, such as tires, hubcaps and engine parts, to companies that salvage damaged vehicles.

Subrogation is typically received in the case of liability policies. For example, an insurance carrier paying a claimant for liability associated with a product manufactured by an insured, may in turn attempt to recover part or all of the amount paid to the claimant from the company that made a part used in manufacturing the product.

The paid loss figures provided in columns 4 (direct and assumed loss payments) and 5 (ceded loss payments) are net of S&S received, and the unpaid losses provided in columns 13 through 16 are net of anticipated S&S, if the company reduces its reserves for anticipated S&S. We typically find that when companies take credit for anticipated S&S, they do so in the "bulk and IBNR"[79] amounts as opposed to the "case basis" reserves. It is difficult enough to estimate reserves for known claims, let alone the amount that will be recovered for salvage and/or subrogation on those claims.

For statutory reporting purposes, insurance companies can take credit for S&S received, as well as that anticipated in its loss reserves. This means that companies can reduce their reserves by estimates of recoveries that they expect to receive in the future.

The S&S figures displayed in columns 10 (received) and 23 (anticipated) are for informational purposes only. As displayed in the formula for total net paid loss and LAE in column 11, S&S received in column 10 is not subtracted from the paid loss and LAE amounts in columns 4 through 9, as they are already reduced by the S&S received. The following illustrates the calculation on total net paid loss and LAE using data from the total line from Schedule P, Part 1 – Summary of the 2018 Annual Statement for Fictitious Insurance Company.

TABLE 33

Data from 2018 Schedule P – Part 1 – Summary for Fictitious Insurance Company (000 omitted)			
Column	Item	Amount	Notes
4	Direct and assumed loss payments	116,277	
5	Ceded loss payments	16,875	
	Net loss payments	99,402	= Column 4 – Column 5
6	Direct and assumed DCC payments	10,266	
7	Ceded DCC payments	1,067	
	Net DCC payments	9,199	= Column 6 – Column 7
8	Direct and assumed A&O payments	10,830	
9	Ceded A&O payments	417	
	Net A&O payments	10,413	= Column 8 – Column 9
11	Total net paid	119,014	= (Columns 4 + 6 + 8) – (Columns 5 + 7 + 9)

The S&S received figure in column 10 of Schedule P, Part 1 – Summary ($5,283 in total; 000 omitted) does not enter the above calculation, as the loss payments shown in columns 4 and 5 have already been reduced by this amount. The amount shown in column 11 is net of the S&S received amount shown in column 10.

The same goes for the total net loss and LAE unpaid in column 24; anticipated S&S in column 23 is not subtracted from the case and IBNR figures in columns 13 through 22, as it is already displayed net of anticipated S&S (if the company anticipates S&S in its recorded reserves).

[79] Hereafter we will refer to "bulk and IBNR" simply as "IBNR."

The following provides a similar illustration using total unpaid amounts from Fictitious' 2018 Schedule P, Part 1 – Summary.

TABLE 34

Data from 2018 Schedule P – Part 1 – Summary for Fictitious Insurance Company (000 omitted)

Column	Item	Amount	Notes
13	Direct and assumed case basis losses	24,945	
14	Ceded case basis losses	5,343	
	Net case basis losses	19,602	= Column 13 – Column 14
15	Direct and assumed IBNR losses	26,330	
16	Ceded IBNR losses	4,038	
	Net IBNR losses	22,292	= Column 15 – Column 16
17	Direct and assumed case basis DCC	2,424	
18	Ceded case basis DCC	258	
	Net case basis DCC	2,166	= Column 17 – Column 18
19	Direct and assumed IBNR DCC	5,401	
20	Ceded IBNR DCC	499	
	Net IBNR DCC	4,902	= Column 19 – Column 20
21	Direct and assumed A&O unpaid	2,599	
22	Ceded A&O unpaid	4	
	Net A&O unpaid	2,595	= Column 21 – Column 22
24	Total net losses and expenses unpaid	51,557	= (Columns 13 + 15 + 17 + 19 + 21) – (Columns 14 + 16 + 18 + 20 + 22)

Column 23, which provides anticipated S&S ($1,363 in total; 000 omitted), is not included in the above calculation as the amounts in loss columns are provided on a net basis.

Composition of Loss and LAE Reserve Figures Provided in Schedule P, Part 1

The case and IBNR reserves provided in Part 1 are net of tabular[80] discounting and gross of non-tabular discounting, up until columns 32 and 33. The amount of non-tabular discount is shown separately for loss and LAE in columns 32 and 33, respectively. For Fictitious, the amounts shown in columns 32 and 33 are zero because the Company does not discount non-tabular reserves. This is confirmed in part B of the Note to Financial Statements titled "Discounting of Liabilities for Unpaid Losses or Unpaid Loss Adjustment Expenses" (Note 32B in the 2018 Annual Statement).

The reserves shown on the Balance Sheet are provided in columns 35 and 36 for loss and LAE, respectively. These figures are on a net of reinsurance basis, and net of all discounting,

[80] Tabular reserves are defined on page 159 of the 2018 NAIC Annual Statement Instructions to Note 32 of the Financial Statements as "indemnity reserves that are calculated using discounts determined with reference to actuarial tables that incorporate interest and contingencies such as mortality, remarriage, inflation, or recovery from disability applied to a reasonably determinable payment stream. This definition shall not include medical loss reserves or any loss adjustment expense reserves."

if applicable. The sum of columns 35 and 36 will reconcile to the amount shown in column 24 reduced by the amount of discount shown in columns 32 and 33.

TABLE 35a

Data from 2018 Schedule P - Part 1 - Summary for Fictitious Insurance Company (000 omitted)

Column	Item	Amount	Notes
	Total net losses unpaid	41,894	Columns (13 + 15) - Columns (14 + 16)
	Total net expenses unpaid	9,663	Columns (17 + 19 + 21) - Columns (18 + 20 + 22)
24	Total net losses and expenses unpaid	51,557	
32	Nontabular discount on losses	XXX	
33	Nontabular discount on loss expense	XXX	
	Total nontabular discount	XXX	= Column 32 + Column 33
35	Net balance sheet loss reserves after discount	41,894	Columns (13 + 15) - Columns (14 + 16 + 32)
36	Net balance sheet loss expense reserves after discount	9,663	Columns (17 + 19 + 21) - Columns (18 + 20 + 22 + 33)
	Total net losses and expenses unpaid after discount	51,557	= Column 35 + Column 36

As we shall see in Part IV. Statutory Filings to Accompany the Annual Statement of this publication, Schedule P, Part 1 – Summary provides the source of the recorded reserve amounts that the Appointed Actuary opines upon in the Statement of Actuarial Opinion on behalf of the insurance company. The Appointed Actuary opines on the loss and LAE reserve amounts provided in columns 35 and 36, respectively, on a net of reinsurance basis, and columns 13 plus 15 and columns 17 plus 19 plus 21, respectively, on a gross of reinsurance basis. For Fictitious Insurance Company, the amounts shown in Exhibit A to the 2018 Statement of Actuarial Opinion, on which the Appointed Actuary has provided his opinion, are as follows.

TABLE 35b

Fictitious Insurance Company 2018 Statement of Actuarial Opinion Loss and LAE Reserve Amounts Per Exhibit A		
Loss and LAE Reserves:		Amount
1.	Reserve for Unpaid Losses (Liabilities, Surplus and Other Funds page, Col 1, Line 1)	$41,894,000
2.	Reserve for Unpaid LAE (Liabilities, Surplus and Other Funds page, Col 1, Line 3)	$9,663,000
3.	Reserve for Unpaid Losses – Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Cols. 13 and 15, Line 12 * 1,000)	$51,275,000
4.	Reserve for Unpaid LAE – Direct and Assumed (Should equal Schedule P, Part 1 – Summary, Totals from Cols. 17, 19 and 21, Line 12 * 1,000)	$10,424,000

The figures shown in Schedule P are net of intercompany pooling. As suggested by the "XXX" in column 34, Fictitious does not participate in any intercompany pooling arrangements. This can be confirmed by a reading of the Notes to the Financial Statements titled "Intercompany Pooling Arrangements" (Note 26 in the 2018 Annual Statement) for an insurance company. We will discuss the effect of intercompany pooling on Schedule P reporting in a separate section at the end of this chapter.

Incurred loss and LAE

The other items of interest in Schedule P, Part 1 are the total losses and loss expense incurred columns (26 through 28) and resulting loss and LAE ratios columns (29 through 31). The loss ratio columns are useful in assessing historical performance of the business separately on a direct and assumed, ceded and net basis. For companies with non-proportional reinsurance, the loss ratios will differ on a direct and net basis, and one can get a sense if the company is paying relatively more for the reinsurance than the direct risk. Using Fictitious as an example, we see that its incurred loss and LAE ratios differ on a direct plus assumed, ceded and net of reinsurance basis.

TABLE 36

Years in Which Premiums Were Earned and Losses Were Incurred		Loss and Loss Expense Percentage (Incurred/Premiums Earned)		
		29	30	31
		Direct and Assumed	Ceded	Net
1	Prior			
2	2009	66.9	71.9	65.6
3	2010	57.7	44.3	61.3
4	2011	52.9	52.6	53.0
5	2012	61.8	106.5	54.3
6	2013	52.1	53.4	51.9
7	2014	54.9	52.2	55.2
8	2015	66.5	65.0	66.6
9	2016	62.8	62.3	62.8
10	2017	68.2	52.5	69.5
11	2018	78.9	72.6	79.4

Since 2014, the Company's ceded loss and expense ratios have been lower than its direct plus assumed ratios, thereby resulting in higher net loss ratios.

We should note that the amounts shown as "incurred" in columns 26 through 31 are on an "ultimate incurred" basis. This is an important definitional distinction from "case incurred," and people often get the two confused, so we will walk through the definitions here.

The following equations are different ways of presenting ultimate incurreds:

Ultimate incurred loss

= Paid loss + case outstanding loss + IBNR loss
= Reported loss + IBNR loss
= Paid loss + unpaid loss

Paid losses represent those amounts paid by the insurance carrier. Case outstanding losses represent the reserve for known claims, which is generally established by the company's claims administrators/adjusters. IBNR represents the reserve for claims Incurred But Not Reported. IBNR includes a provision for:

- Development on known claims ("case development")
- Pure IBNR, or those claims that are incurred but not yet reported to the insurance carriers
- Reopened claims

Case development is intended to cover upward and downward movements in the reserves established by the adjusters as additional information becomes available about the claim. For example, an adjuster may establish an initial reserve for a workers' compensation claim based on the initial injury reports from the employer or claimant's doctor. However, subsequent medical examinations may uncover that the injury is worse than originally expected, resulting in additional cost and the need for an increase in the case reserve estimate to reserve the claim to its ultimate value.

Reported loss is equal to the amount of paid plus case outstanding; it represents the dollar value of loss known to the insurance company. The term "case incurred" is synonymous with "reported" and represents the reported value of known cases.

Unpaid loss (or loss reserve) equals the amount of case outstanding plus IBNR reserves. It represents the remaining amount expected to be paid on claims incurred by the insurance company.

Actuaries often derive an ultimate loss estimate using triangular projection methods. The amount unpaid (or loss reserve) can be derived using the above formulas by subtracting paid losses from the ultimate estimate. Similarly, IBNR can be determined by subtracting reported losses from the ultimate estimate.

Data used in actuarial projections can be derived from the information contained in Parts 2 through 4 of Schedule P, as will be discussed later in this chapter under the heading "Actuarial Projections" within the section "SCHEDULE P – PARTS 2 THROUGH 4."

Claim Count Information in Part 1

Certain line of business subparts of Part 1 also provide claim count information that is not included in Part 1 – Summary because such information is not captured for all lines. Column 12 provides the number of claims reported, direct plus assumed. However, this column only applies to certain lines and may be left blank for others, including the Summary. The applicable lines are:

- Homeowners/Farmowners
- Private Passenger Auto Liability/Medical
- Commercial Auto Liability/Medical
- Workers' Compensation
- Commercial Multiple Peril
- Medical Professional Liability
- Other Liability
- Auto Physical Damage
- Products Liability
- Warranty

Further, column 25 provides the number of claims outstanding, direct plus assumed. This column is completed for all lines except the nonproportional reinsurance assumed lines (Parts N, O and P) and therefore the Summary.

For those lines, including the Summary, where claim count information is not included, the corresponding columns are filled in with "XXX."

Claim count data can be used to explore changes in ultimate loss and LAE or reserve levels or to identify changes in claims settlement or reserving philosophy. We will provide more details in our discussion of Schedule P, Part 5; however, for now we will show the meaningful relationships that can be derived from Schedule P, Part 1 for Fictitious' Homeowners/Farmowners lines of business (Part 1A).

First, it is generally assumed that net claim counts are equal to direct and assumed counts, unless 100% of the business is ceded. The theory is that a direct claim results in a net claim, even if the value of the net claim is $0. Therefore, all ratios that we show below, both on a gross and net of reinsurance basis, are in relation to direct plus assumed counts.

Data from Schedule P, Part 1 can be used to calculate reported claim frequency, which is the relationship of reported claim counts as of December 31, 2018, to earned premium.

TABLE 37

Data From Schedule P – Part 1 – Homeowners & Farmowners
(000 omitted)
Average Reported Claim Frequency

Years in Which Premiums Were Earned and Losses Were Incurred		Earned Premium		Number of Claims Reported Direct and Assumed (Col. 12)	Average Reported Claim Frequency	
		Direct and Assumed (Col. 1)	Net (Col. 3)		Direct and Assumed Counts/Earned Premium	Direct and Assumed Counts/Net Earned Premium
1	Prior	XXX	XXX	XXX	XXX	XXX
2	2009	1,931	1,763	242	0.125	0.137
3	2010	2,251	2,084	253	0.113	0.122
4	2011	2,721	2,612	219	0.081	0.084
5	2012	3,123	3,000	217	0.069	0.072
6	2013	3,307	3,231	216	0.065	0.067
7	2014	3,609	3,507	194	0.054	0.055
8	2015	3,816	3,713	300	0.079	0.081
9	2016	4,003	3,895	296	0.074	0.076
10	2017	4,294	4,178	325	0.076	0.078
11	2018	4,550	4,445	427	0.094	0.096
12	Totals	XXX	XXX	XXX	XXX	XXX

Table 37 can help us identify trends in claim frequency over the accident years. It is not a complete picture because claim counts are on a reported basis, as opposed to ultimate. However, for a short-tailed line of business such as homeowners, where losses are generally reported within the year in which they are incurred (i.e., accident year), it is not a bad approximation. Reported claim frequency appears to have increased in 2018 relative to both gross and net earned premiums (e.g., frequency in 2018 of 0.094 per $000 of gross earned premium versus 2017 of 0.076). This is most likely due to the high frequency of weather-related and catastrophe claims incurred by the Company during 2018.

We note that the interpretation of frequency trends using earned premium can be misleading due to the effect of rate changes. In our example, the increasing trend in Fictitious' claim frequency relative to earned premium may be partly attributed to soft market conditions in addition to the number of catastrophe claims. Viewing claim frequency in terms of exposures (e.g., house years for homeowners) would provide a clearer comparison and enhance the ability to understand observed trends. Regardless, when investigating trends in claim frequency, consideration should be made for changes over time in a company's mix of business (e.g., by types of exposures, geography), policy limits, reinsurance attachment points and limits, as well as the way the company counts its claims.

We can also compute the average value of reported claims by year, with each year evaluated as of December 31, 2018, using Schedule P, Part 1 data, as shown below.

TABLE 38

Data From Schedule P – Part 1 – Homeowners & Farmowners
(000 omitted)
Average Reported Loss and DCC Severity

Years in Which Premiums Were Earned and Losses Were Incurred		Reported Loss and DCC: Direct and Assumed (Cols. 4 + 6 + 13 + 17)	Reported Loss and DCC: Net (Direct - Ceded per Cols. 5 + 7 + 14 + 18)	Number of Claims Reported Direct and Assumed (Col. 12)	Average Reported Loss & DCC: Direct and Assumed Reported $/Counts *1000	Average Reported Loss & DCC: Net Reported $/Direct and Assumed Counts *1000	Trend in Average Reported $: Direct and Assumed Severity in Accident Year 20XX+1 divided by 20xx	Trend in Average Reported $: Net Severity in Accident Year 20XX+1 divided by 20xx
1	Prior	6	6	XXX	XXX	XXX	XXX	XXX
2	2009	1,021	942	242	4,219	3,893		
3	2010	1,170	1,107	253	4,625	4,375	10%	12%
4	2011	1,450	1,381	219	6,621	6,306	43%	44%
5	2012	1,644	1,368	217	7,576	6,304	14%	0%
6	2013	1,350	1,349	216	6,250	6,245	-18%	-1%
7	2014	1,407	1,405	194	7,253	7,242	16%	16%
8	2015	2,186	2,185	300	7,287	7,283	0%	1%
9	2016	2,214	2,208	296	7,480	7,459	3%	2%
10	2017	2,421	2,419	325	7,449	7,443	0%	0%
11	2018	3,372	3,369	427	7,897	7,890	6%	6%
12	Totals	18,241	17,739	XXX	XXX	XXX	XXX	XXX

We see that there hasn't been much of a trend in the average cost per reported claim since 2015, until we get to 2018. The relatively flat trend from 2015 through 2017 is most likely due to economic factors during the time period and general flattening of costs associated with the repair and rebuilding of damaged properties. Similar to the increase in frequency in 2018, the increase in claim costs is primarily attributed to an increase in the size of claims due to the catastrophic events of 2018.

Here again, the comparison does not provide a complete picture because we are comparing accident year data at different levels of maturity rather than evaluating the reported loss and claims counts at their ultimate values. As we shall see, comparisons at the ultimate level can be made by developing loss and DCC data provided in Parts 2 through 4 and claim count data provided in Part 5.

Finally, we can also show the average cost of open claims as of December 31, 2018, using Part 1 data, as provided in the Table 39:

TABLE 39

Data From Schedule P – Part 1 – Homeowners & Farmowners
(000 omitted)
Average Case Outstanding Loss and DCC Severity

		Case Basis Loss and DCC		Number of Claims	Average Case O/S Loss & DCC	
Years in Which Premiums Were Earned and Losses Were Incurred		Direct and Assumed (Cols. 13 + 17)	Net (Direct – Ceded per Cols. (14 + 18)	Outstanding Direct and Assumed (Col. 25)	Direct and Assumed Case Basis $/Counts *1,000	Net Case Basis $/Direct and Assumed Counts *1,000
1	Prior	4	4	1	4,000	4,000
2	2009	0	0	1	0	0
3	2010	1	1	1	1,000	1,000
4	2011	2	2	1	2,000	2,000
5	2012	3	0	1	3,000	0
6	2013	8	8	1	8,000	8,000
7	2014	18	18	1	18,000	18,000
8	2015	40	40	1	40,000	40,000
9	2016	61	61	1	61,000	61,000
10	2017	124	124	3	41,333	41,333
11	2018	366	366	21	17,429	17,429
12	Totals	627	624	33	19,000	18,909

What we see in Table 39 is that the case outstanding reserve values and number of open claims generally decrease with maturity (ignoring the prior years row, which is a compilation of all prior years into one line). This makes sense, as eventually all claims will be closed and the outstanding reserves will be $0.[81] We also see that the average case reserves increase in maturity to a certain point, at which they decrease (ignoring the prior years row). This suggests that the claims that remain open after 24 months (accident year 2017 in this case) tend to be the larger dollar-valued claims. Put another way, the claims that cost the least tend to be the easiest to administer and close, while the more costly claims take longer to settle and pay out. This makes sense and is generally the case with property/casualty lines of business. As time goes on, the average case reserve for homeowners claims tends to decrease as the payments decline to closure.

The average case reserve values are lower on accident year 2018 relative to the immediately prior periods. There are still small to midsized claims, in addition to the large dollar-value claims, that remain open on the current accident year. These low-value claims suppress the average.

[81] Sometimes we will see a very high severity in a mature accident year, relative to the surrounding years and the general decreasing trend with maturity. This will happen when there's one or a small number of large dollar-valued claims outstanding.

SCHEDULE P – PARTS 2 THROUGH 4

Parts 2 through 4 provide a historical array of incurred, paid and IBNR loss and DCC, respectively. The data is provided on a net of reinsurance and net of S&S (as applicable) basis.

Similar to Part 1 – Summary, the information in the Summary of Parts 2 through 4 is provided for each of the past 10 years in which losses were incurred using the aforementioned definitions depending on the type of policies (e.g., occurrence, claims-made, tail, or fidelity and surety). The data is evaluated as of December 31 for each of the last 10 years.

Details are provided by line of business in the same breakdowns as in Part 1, with 10 accident years shown for all lines except for those lines previously mentioned (e.g., Special Property, Auto Physical Damage).

Discounting

Parts 2 through 4 of Schedule P are gross of all discounting. Therefore, the reserve amounts shown in Parts 2 through 4 will not reconcile to those provided in Part 1 for companies that discount nontabular reserves. The amount of discount is reported in the Notes to Financial Statements, which enables reconciliation between Part 1 and Parts 2 through 4.

We can illustrate this using Schedule P, Parts 1, 2 and 3, Summary for Fictitious. As displayed in Table 40b, the difference between the total net loss and DCC reserve reported in Schedule P, Part 1 and the amount indicated by subtracting the figures in column 10 of Parts 2 and 3 provides the $1.365 million of reduction for tabular discount taken in Schedule P, Part 1.

TABLE 40a

Data from 2018 Annual Statement for Fictitious Insurance Company			
Years in Which Losses Were Incurred	Net Loss and DCC at Year End per Schedule P (000 omitted)		
	Net Incurred Part 2 Summary	Net Paid Part 3 Summary	Net Unpaid Part 2 – Part 3 Summary
Prior	46,022	30,210	15,812
2009	13,387	12,202	1,185
2010	13,540	12,238	1,302
2011	12,099	10,933	1,166
2012	12,321	10,919	1,402
2013	11,679	9,804	1,875
2014	12,895	10,503	2,392
2015	15,635	12,130	3,505
2016	14,745	10,332	4,413
2017	16,345	9,774	6,571
2018	19,364	8,660	10,704
Total	188,032	137,705	50,327

TABLE 40b

Net Unpaid Loss and DCC Reserves Per Schedule P – Part 1 – Summary (000 omitted)	
Column 24, Total Net Losses and Expenses Unpaid, Line 12, Totals:	51,557
Column 21, Direct and Assumed A&O Unpaid, Line 12, Totals:	2,599
Column 22, Ceded A&O Unpaid, Line 12, Totals:	4
Column 24 – (Column 21 – Column 22), Total Net Losses and DCC Unpaid:	48,962
Difference, Schedule P – Part 2 minus Part 3 and Schedule P – Part 1:	1,365
Note to Financial Statement on Discounting (in whole dollars)	
Workers' Compensation Cases:	495,000
Workers' Compensation IBNR:	664,000
Other Liability Cases:	21,000
Other Liability IBNR:	15,000
Other Liability – Structured Payments IBNR:	170,000
Total Amount of Tabular Discount per Notes to Financial Statements:	1,365,000
Total Amount of Tabular Discount per Notes to Financial Statements, divided by 1,000:	1,365

The amount of tabular discount included in Schedule P, Part 1 should reconcile to the amount disclosed in the Note titled "Discounting of Liabilities for Unpaid Losses or Unpaid Loss Adjustment Expenses" (Note 32 of the 2018 Annual Statement).

Actuarial Projections

The format of Parts 2 through 4 is conducive for loss development projection methods used by actuaries to assess a company's reserve adequacy. However, actuaries tend to view the data in a slightly different format than that presented in Parts 2 through 4. Shifting all of the cells to the left so that each accident year starts with figures in column 1 transforms the data into standard triangular format used in the loss development (or "chain ladder") method. The paid loss triangle comes directly from Schedule P, Part 3, and the case incurred loss triangle can be derived by subtracting the IBNR in Part 4 from the incurreds in Part 2. The following provides the calculation of the net case incurred (reported) triangle for Fictitious Insurance Company.

TABLE 41a

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 2 – Summary

Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
Prior	XXX	35,994	38,360	41,784	43,601	44,861	45,378	45,947	45,884	45,845	46,022
2009	14,249	13,109	13,545	13,763	13,842	13,778	13,722	13,657	13,408	13,387	
2010	14,434	13,651	14,040	13,994	14,032	14,042	13,748	13,617	13,540		
2011	15,733	14,265	13,630	13,209	12,726	12,485	12,288	12,099			
2012	15,982	14,733	14,195	13,210	12,768	12,445	12,321				
2013	13,501	13,051	12,370	12,056	11,837	11,679					
2014	13,938	13,629	13,303	13,265	12,895						
2015	15,980	16,106	16,015	15,635							
2016	14,917	14,851	14,745								
2017	15,972	16,345									
2018	19,364										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ending		50,243	65,903	84,713	101,651	114,561	127,581	141,626	154,924	169,543	188,032
	Check:	–	–	–	–	–	–	–	–	–	–

TABLE 41b

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 4 – Summary
Bulk and IBNR Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
Prior	XXX	17,126	14,330	13,764	12,807	12,285	11,632	10,529	9,752	8,907	8,088
2009	7,093	3,349	2,393	1,821	1,445	1,249	1,121	1,010	728	677	
2010	7,149	3,583	2,544	1,799	1,479	1,370	1,016	814	713		
2011	8,512	4,667	3,068	2,149	1,505	1,122	864	651			
2012	7,337	4,644	3,505	2,131	1,522	1,030	876				
2013	6,333	4,175	2,757	1,959	1,440	1,114					
2014	6,022	3,756	2,640	2,018	1,459						
2015	6,400	3,932	2,810	1,850							
2016	6,008	3,544	2,511								
2017	5,817	3,682									
2018	6,422										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ending		24,219	24,828	28,252	29,176	29,574	30,211	29,569	28,961	27,972	28,043
	Check:	–	–	–	–	–	–	–	–	–	–

TABLE 41c

Difference between Schedule P – Part 2 – Summary and Part 4 – Summary

Case Incurred (Reported) Net Losses and Defense and Cost Containment Expenses Reported at Year-End (000 omitted)

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
Prior	XXX	18,868	24,030	28,020	30,794	32,576	33,746	35,418	36,132	36,938	37,934
2009	7,156	9,760	11,152	11,942	12,397	12,529	12,601	12,647	12,680	12,710	
2010	7,285	10,068	11,496	12,195	12,553	12,672	12,732	12,803	12,827		
2011	7,221	9,598	10,562	11,060	11,221	11,363	11,424	11,448			
2012	8,645	10,089	10,690	11,079	11,246	11,415	11,445				
2013	7,168	8,876	9,613	10,097	10,397	10,565					
2014	7,916	9,873	10,663	11,247	11,436						
2015	9,580	12,174	13,205	13,785							
2016	8,909	11,307	12,234								
2017	10,155	12,663									
2018	12,942										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ending		26,024	41,075	56,461	72,475	84,987	97,370	112,057	125,963	141,571	159,989
	Check:	–	–	–	–	–	–	–	–	–	–

The “ending” rows simply provide the sum of each of the diagonals of data, thereby showing the ending balances as of December 31 of the respective years.

The following provides the net paid loss and DCC triangle for Fictitious in the same triangular format as shown above for reported loss and DCC.

TABLE 42

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 3 – Summary

Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
Prior	XXX	000	9,061	13,830	18,110	21,281	23,728	26,341	27,752	29,108	30,210
2009	3,881	6,637	8,297	9,620	10,627	11,289	11,686	11,961	12,108	12,202	
2010	4,121	7,109	9,011	10,142	11,035	11,552	11,847	12,070	12,238		
2011	4,061	6,981	8,385	9,439	10,067	10,485	10,772	10,933			
2012	4,376	7,649	8,904	9,766	10,329	10,724	10,919				
2013	4,208	6,630	7,898	8,803	9,481	9,804					
2014	4,591	7,325	8,821	9,846	10,503						
2015	6,026	9,265	10,971	12,130							
2016	5,626	8,740	10,332								
2017	6,278	9,774									
2018	8,660										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ending		3,881	19,819	33,297	48,098	62,292	75,616	90,661	104,889	120,098	137,705
	Check:	–	–	–	–	–	–	–	–	–	–

Cautions When Using Schedule P to Assess Reserve Adequacy

Age-to-age loss development factors can be computed from the above triangles and projections of ultimate loss and DCC made. However, we note several issues that we have observed in practice with blindly using Schedule P data to assess the adequacy of an insurance company's reserves:

- While there are Instructions to the Annual Statement and third-party companies provide software to assist insurers in preparing their Schedule P, certain allocations and presentations are left up to interpretation of the person completing Schedule P.
- Internal pooling or reinsurance agreements may have an impact on the data set, and that impact may not be readily apparent from Schedule P. For example, we have seen pooling and reinsurance arrangements on a calendar year basis, as opposed to accident or policy year, which distorts Schedule P since it is on a net (or after pool) basis.

- Schedule P contains experience from a company's participation in voluntary and involuntary pools and/or associations. Many underwriting pools report IBNR reserves as case reserves, thereby distorting analytics and projections that use case base reserves. Further, a company's level of participation in the pool may have changed over time.
- Schedule P only contains data for the last 10 accident years. Most casualty lines have experienced loss development significantly longer than 10 years. Tail development factors have to be estimated using other (external) sources, thereby increasing the uncertainty of the projections.
- Commutations of reinsurance agreements can also distort an analysis of loss development using Schedule P. Commutations represent an agreement between a reinsurer and the reinsured to release all obligations under a reinsurance contract. Typically, the reinsurer will pay a lump sum to the reinsured to extinguish all future liabilities. The reinsurer's case and IBNR reserves for the assumed contract will drop to $0 upon paying the lump sum, while the ceding company's net reserves should increase since the ceding company can no longer take credit for the reinsurance and "reassumes" the liability.
- The data triangles in Parts 2 through 4 include DCC expenses, potentially masking trends in the loss or DCC components that may impact reserve needs.
- Analytics of the data, including a review of loss ratios, claim closure rates from Part 5 data, and average severities from data contained in Parts 2 through 5 can provide observations regarding trends. However, the underlying cause for these trends, and determination of their impact on future claim payments, can only be obtained through discussion with company management, including interviews with management in the pricing, underwriting and claims departments of the insurance company. Care should be taken in the interpretation of these trends absent these discussions.

This list is not intended to be all-inclusive, but rather illustrate that care should be taken when drawing conclusions about a company's recorded reserves using Schedule P data alone.

As with any unpaid claim analysis, consideration should be made for changes in the company's business, including but not limited to retentions, claims settlement and reserving, business mix, and underlying exposures. One of the Schedule P Interrogatories helps to address this. Interrogatory 7 asks for further explanation regarding "any especially significant events, coverage, retention or accounting changes that have occurred that must be considered" in using Schedule P data to assess reserve adequacy.

Hindsight Tests from Part 2

Part 2 represents ultimate incurred loss and DCC by accident year, recorded by the company at the end of each of the last 10 years. Part 2 is particularly useful as it shows how the company's estimates of ultimate loss and DCC have fared over the past year and past two years, as displayed in columns 11 and 12, respectively. The figures in column 11 provide the change in ultimates over the past year (column 10 minus column 9) for all accident years prior to the current accident year. Column 12 provides the change in ultimates over the past two years (column 10 minus column 8) for all but the most recent two accident years.

The totals of the figures in columns 11 and 12 of Part 2 – Summary reconcile directly to the current calendar year figures in column 1, lines 73 and 75 respectively, of the Five-Year Historical Data exhibit within the Annual Statement. This is illustrated below for Fictitious Insurance Company using the 2018 Annual Statement:

TABLE 43a

Data from 2018 Annual Statement for Fictitious Insurance Company
Schedule P – Part 2 – Summary (000 omitted)
Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year-end

Years in Which Losses Were Incurred	Development	
	One Year	Two Year
Prior	177	138
2009	(21)	(270)
2010	(77)	(208)
2011	(189)	(386)
2012	(124)	(447)
2013	(158)	(377)
2014	(370)	(408)
2015	(380)	(471)
2016	(106)	(172)
2017	73	XXX
2018	XXX	XXX
Total	(875)	(2,601)

TABLE 43b

Five-Year Historical Data (000 omitted)	
	2018
73. Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2 – Summary, Line 12, Col. 11)	(875)
75. Development in estimated losses and loss expenses incurred 2 years before the current year and prior year (Schedule P, Part 2–- Summary, Line 12, Col. 12)	(2,602)

While the absolute dollar amount of development is useful, it is valuable to view loss development in relation to prior year reserves from which the development has emerged, as well as on prior year surplus. For Fictitious, the $0.875 million of favorable development represents less than 1.8% of prior year reserves totaling $49.445 million.[82] This means that, with perfect hindsight, company management would have established reserves at $48.570 million ($49.445 million minus $0.875 million).

In Part IV, Statutory Fillings to Accompany the Annual Statement of this publication, we discuss loss development as a ratio to surplus in further detail. This is a measure used by the NAIC IRIS. For now, we will simply state that the $0.875 million of favorable development represents less than 2.8% of policyholders' surplus as of December 31, 2017, totaling $31.608 million per column 2, line 37 of page 3 of the company's 2018 Annual Statement.

A benefit of Part 2 is that it provides further insight into the observed development. The development across all accident years may be negligible in aggregate; however, there may be large increases or decreases in certain accident years or lines of business that warrant further investigation.

As displayed above, Fictitious Insurance Company experienced favorable development in 2018, totaling $0.875 million on prior accident years. We see that the favorable development on accident years 2009 through 2016 was somewhat offset by adverse development on the prior accident years and the current accident year. This is where the actuary becomes a detective to uncover the cause of the development.

- First, when we see adverse development in the prior accident years, we might first look to the longer-tailed casualty lines as the culprit. Schedule P, Parts 2A through 2T

[82] The net loss and DCC reserve of $49.4 million as of December 31, 2017, was computed by subtracting column 9 in Schedule P, Part 2 – Summary from column 9 in Schedule P, Part 3 – Summary (i.e., ultimate incurred minus paid = unpaid). This was done to put the reserve amount on the same basis as the development amount, both of which are undiscounted.

provide net incurred loss and DCC development for each of the Schedule P lines of business.

- Second, when we see adverse development on the "all prior" years, and then a consistent trend of favorable development, we question the difference between the exposures in the prior accident years versus those in the subsequent accident years. Generally speaking, if the exposures underlying the prior years were consistent with those in subsequent accident years, we would expect the adverse development to flow through to the current years as well.

Once we identify the line of business, we could look to other areas of the Annual Statement for guidance. For example, we can turn to the Notes to the Financial Statements, in particular "Changes in Incurred Losses and Loss Adjustment Expenses" (Note 25 of the 2018 Annual Statement) for further details. This Note provides management's explanation for development during the year. This may lead to review of additional notes, such as the note titled "Asbestos/Environmental Reserves." Oftentimes when we see adverse development isolated to the prior years row, we look to see if it stems from asbestos and environmental (A&E) claims activity.[83]

While the line of business details in Parts 2A through 2T and Notes to the Financials provide further insight into the source of loss development, they do not substitute the value of a conversation with management of the insurance company. Management can provide further color around the causes of development that pure numbers and notes cannot.

Prior Years Row

The calculation of the prior years row in Schedule P, Parts 2 through 4 can be a bit cumbersome and confusing. The easiest way to explain the calculation is to start backwards, providing the source of the prior years row for Schedule P, Part 4, and then work our way to the details underlying the computation of Part 3, and then Part 2.

Prior Years Row – Part 4

The prior row in Part 4 is the most straightforward. It is simply the amount recorded by the company for bulk and IBNR reserves for all accident years prior to the most recent 10. This amount is determined by the company's management and recorded in Part 4, as are the amounts for all subsequent accident years.

One can reconcile the prior year balances at each evaluation date (i.e., across the columns) to Schedule P, Part 1 of the current and prior year Annual Statements. Specifically, the amount in column 15 (direct and assumed bulk + IBNR loss) minus 16 (ceded bulk + IBNR loss) plus 19

[83] There is considerable uncertainty around the reserving for these types of claims due to the length of time between exposure to manifestation of disease that gives rise to a claim. As such, the industry has experienced considerable adverse development on reserves established for these claims over the years.

(direct and assumed bulk + IBNR DCC) minus 20 (ceded bulk + IBNR DCC) of Schedule P, Part 1, should equal the last number in column 10 of the prior row in Part 4 after adjusting for any tabular discount. The following provides the calculation for Fictitious for 2018.

TABLE 44a[84]

Prior years row	Sch P Part 1 Column	Amount $000s
Direct plus assumed bulk + IBNR loss	15	7,719
minus Ceded bulk + IBNR loss	16	1,416
plus direct plus assumed bulk + IBNR DCC	19	1,545
minus Ceded bulk + IBNR DCC	20	138
Net bulk + IBNR loss & DCC (net of tabular discount)		7,710
plus tabular discount		378
Net bulk + IBNR per Schedule P, Part 4	2018	8,088

The entire prior years row for Part 4 is provided below.

TABLE 44b

Bulk and IBNR Reserves on Net Losses and Defense Cost Containment Expenses Reported at Year End (000 omitted)										
Years in Which Losses Were Incurred	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018
1. Prior	17,126	14,330	13,764	12,807	12,285	11,632	10,529	9,752	8,907	8,088

Prior Years Row – Part 3

As discussed previously, Part 3 provides cumulative paid loss and DCC for the latest 10 accident years, evaluated as of the end of each of those years. The prior row for Part 3 also provides cumulative paid data; however, it does not start with the cumulative payments from the first year that the company wrote business. Rather, it shows the payments that have occurred on loss and DCC reserves as of the earliest evaluation date in the table, for all prior accident years. Only payments made subsequent to the establishment of reserves as of the earliest evaluation date in the table are shown. The 2018 Annual Statement for Fictitious shows the prior row for Part 3 as the following.

[84] The amount of tabular discount shown in the table is derived from the data in Fictitious' Schedule P by taking the bulk and IBNR in the prior years row from Part 4 minus the corresponding amount in Part 1.

TABLE 45

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 3 – Summary

Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018
1. Prior	000	9,061	13,830	18,110	21,281	23,728	26,341	27,752	29,108	30,210

The amount of $9,061 in column 2 represents net amounts paid in 2010 on net loss and DCC reserves established by the Company as of December 31, 2009. The amount shown in column 3 of $13,830 represents net amounts paid since year-end 2009 on net loss and LAE reserves as of December 31, 2009, for all prior accident years. This continues all the way until 2018, where the amount of $30,210 represents net amounts paid since year-end 2002 (through year-end 2018) on net loss and DCC reserves as of December 31, 2009, for all prior accident years.

Only loss and DCC payments on reserves evaluated as of the earliest evaluation date (December 31, 2009, in our example) are shown in the prior row. As a result, the balance in the first column is always zero.

The calculation of the prior row in Part 3 is done by computing the incremental payments subsequent to the earliest evaluation date (2009 in our example) for both the prior and first subsequent accident year from the previous year's Schedule P, Part 3 (2017 in our example). The following provides this calculation using Part 3 from the 2017 Schedule P for Fictitious.

TABLE 46

Data from 2017 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 3 – Summary
Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2008	2 2009	3 2010	4 2011	5 2012	6 2013	7 2014	8 2015	9 2016	10 2017
Prior	000	8,238	14,960	18,129	21,279	23,817	25,840	28,163	29,380	30,519
2008	4,680	8,297	10,637	12,236	13,367	13,999	14,424	14,714	14,908	15,124

Calculation to Transition 2017 Part 3 Prior Row to 2011 Schedule P, Part 3
Current Column minus 2002 Column (Column 2) in 2010 Part 3

Years in Which Losses Were Incurred	1 2008	2 2009	3 2010	4 2011	5 2012	6 2013	7 2014	8 2015	9 2016	10 2017
Prior		–	6,722	9,891	13,041	15,579	17,602	19,924	21,142	22,281
2008		–	2,340	3,939	5,070	5,702	6,127	6,417	6,611	6,828
Sum		–	9,062	13,830	18,110	21,282	23,729	26,342	27,753	29,108

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 3 – Summary
Cumulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018
Prior	000	9,061	13,830	18,110	21,281	23,728	26,341	27,752	29,108	30,210

As displayed above, the starting point for the calculation is the first two rows (prior and 2008) of Part 3 of the Fictitious 2017 Annual Statement. To calculate the prior years row for Part 3 of Fictitious' 2018 Annual Statement, the difference between amounts in each column and the amounts in column 2 (2009) is computed. The prior and subsequent accident year (2008) payments are then added together to produce the new prior row for Part 3 of the Company's 2018 Schedule P.

For example, cumulative net paid loss and DCC for column 2 (2010) are calculated as:

$$14{,}960 - 8{,}238 + 10{,}637 - 8{,}297 = 6{,}722 + 2{,}340 = 9{,}061$$[85]

[85] Minor differences due to rounding.

As another example, the cumulative net paid loss and DCC for column 10 (2017) are calculated as:

30,519 - 8,238 + 15,124 - 8,297 = 22,281 + 6,827 = 29,108[86]

Prior Years Row – Part 2

As discussed previously, Part 2 provides cumulative ultimate incurred loss and DCC for the latest 10 accident years, evaluated as of the end of each of those years. The prior row for Part 2 also provides cumulative incurred data; however, it does not start with the cumulative incurreds from the first year that the company wrote business. Rather, it starts with the net loss and DCC reserves recorded by the Company as of the earliest evaluation date in the table and includes this amount in column 1 of Schedule P, Part 2. For example, using Schedule P, Parts 2 through 4, Summary, of the 2017 and 2018 Annual Statements for Fictitious Insurance Company, we see that column 1 of the prior row in the 2011 Schedule P, Part 2, is equal to the sum of the following amounts in column 2 (labeled "2009") from the 2017 Annual Statement (USD in 000s).

TABLE 47

Data from 2017 Annual Statement	2009	Source
Case outstanding:		Schedule P, Part 2 – Summary minus Part 3 – Summary minus Part 4 – Summary
Prior Years row	15,123	Line 1
2008 row	3,745	Line 2
Sum	18,868	
Bulk and IBNR:		Schedule P, Part 4 – Summary
Prior Years row	13,241	Line 1
2008 row	3,886	Line 2
Sum	17,127	
Total Unpaid:		
Prior Years row	28,365	Sum of above (case outstanding plus bulk and IBNR)
2008 row	7,630	Sum of above (case outstanding plus bulk and IBNR)
Sum	35,995	Sum of above (case outstanding plus bulk and IBNR)
↓		
2018 Annual Statement	2009	Source
Schedule P – Part 2 – Summary, Prior Years row	35,994	Line 1

[86] Minor differences due to rounding.

As displayed above, the amount in column 1 of the prior row in 2018 Schedule P, Part 2, Summary is $35,994[87].

Then, amounts in columns 2 and subsequent are equal to the ending reserves (case plus bulk plus IBNR reserves) as of each corresponding year-end, plus the paids from the corresponding prior row in Schedule P, Part 3. This is shown below for Fictitious:

TABLE 48

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Parts 2 through 4 – Summary

Prior Years Row, Net Loss & DCC

Years in Which Losses Were Incurred	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018
Prior Paid from Part 3	000	9,061	13,830	18,110	21,281	23,728	26,341	27,752	29,108	30,210
Prior Case Outstanding from Part 2 – Part 3 – Part 4	XXX	14,969	14,190	12,684	11,295	10,018	9,077	8,380	7,830	7,724
Prior Bulk + IBNR from Part 4	17,126	14,330	13,764	12,807	12,285	11,632	10,529	9,752	8,907	8,088
Total Prior Unpaid (Case + Bulk + IBNR)		29,299	27,954	25,491	23,580	21,650	19,606	18,132	16,737	15,812
Prior Incurred Loss = Paid + Unpaid	35,994	38,360	41,784	43,601	44,861	45,378	45,947	45,884	45,845	46,022

Data from 2018 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 2 – Summary

Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018
Prior	35,994	38,360	41,784	43,601	44,861	45,378	45,947	45,884	45,845	46,022

As displayed above, the case outstanding plus bulk plus IBNR reserves in the prior rows, derived from Parts 2 through 4, are summed and then added to the corresponding cumulative paids since 2010. This produces the “incurreds” on all prior accident years, as shown in Schedule P, Part 2.

All the examples above are provided for the Summary of Schedule P, Parts 2 through 4, with the calculation being the same for all of the lines of business in Parts 2A through 2T.

[87] Minor differences due to rounding.

Prior Years Row – Fictitious 2017 Annual Statement

For completion, and so that a reconciliation can be made of the amounts shown in Table 48 for 2017, the following provides the prior years and 2008 rows from Schedule P, Parts 2 and 4 from Fictitious' 2017 Annual Statement.

TABLE 49

Data from 2017 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 2 – Summary

Incurred Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2008	2 2009	3 2010	4 2011	5 2012	6 2013	7 2014	8 2015	9 2016	10 2017
Prior	31,760	36,602	38,321	41,474	43,475	44,539	45,113	45,607	45,605	45,706
2008	15,976	15,927	16,574	16,844	16,661	16,856	16,799	16,875	16,814	16,673

Data from 2017 Annual Statement for Fictitious Insurance Company,
Schedule P – Part 4 – Summary

Bulk and IBNR Net Losses and Defense and Cost Containment Expenses Reported at Year-End
(000 omitted)

Years in Which Losses Were Incurred	1 2008	2 2009	3 2010	4 2011	5 2012	6 2013	7 2014	8 2015	9 2016	10 2017
Prior	14,550	13,241	11,605	11,986	11,610	11,089	10,606	9,506	8,852	8,191
2008	7,241	3,885	2,725	1,778	1,197	1,196	1,026	1,023	900	716

As a reminder, Part 3 from Fictitious' 2017 Annual Statement is shown in Table 46.

Claim Counts

Part 3 also provides the number of claims closed with and without loss payment in columns 11 and 12, respectively. These figures are provided only for those lines where this information is provided in Part 5 (see below); these figures are not shown in the Summary.

SCHEDULE P – PART 5

Part 5 is provided in the following three sections, which are provided by accident year as of the last 10 year-end evaluations on a direct plus assumed basis:

Section 1: Cumulative number of claims closed with loss payment
Section 2: Number of claims outstanding
Section 3: Cumulative number of claims reported

Part 5 is provided for the following lines of business:

A - Homeowners/Farmowners
B - Private Passenger Auto Liability/Medical
C - Commercial Auto Liability/Medical
D - Workers' Compensation
E – Commercial Multiple Peril
F – Section A[88] – Medical Professional Liability – Occurrence
F – Section B – Medical Professional Liability – Claims-Made
H – Section A – Other Liability – Occurrence[89]
H – Section B – Other Liability – Claims-Made
R – Section A – Products Liability – Occurrence
R – Section B – Products Liability – Claims-Made
T – Warranty

No summary is provided for Part 5.

As noted, claim counts can assist the user in identifying trends or changes in the way claims are settled and reserved. However, caution should be made in relying solely on the analytics without discussion with company management, ideally management within the claims department of the insurance company. There is inconsistency in the way that companies record and report claim counts, and sole reliance on the data without confirmation with management can be misleading. One known inconsistency is that some companies record claims on a per-claim basis and others on a per-claimant basis. As we shall see later in this chapter, the Interrogatories of Schedule P require that companies disclose the method for recording claim counts.

Actuaries can derive many statistics from the data contained in Part 5. In the following paragraphs we discuss the most common claim count statistics used by actuaries, as well as other uses of Part 5.

Claim Closure Rates

These represent the ratio of closed claims to total reported claims. The ratio can be computed as all closed claims, or only those claims closed with payment, divided by reported claims. This relationship, in particular when viewed in the current accident year in comparison to prior accident years during the first 12 months of a development, helps to identify any changes in the rate at which claims are settled (closed).

[88] The line of business section headings change from 1 and 2 to A and B in Part 5, due to the naming of Sections 1 through 3 herein.
[89] Business reported as an aggregate write-in for other lines of business in the State Page is included here (either as occurrence or claims-made, depending on the coverage written).

We often hear claims adjusters say, "The best claim is a closed claim," the reason being that the longer a claim stays open, the greater the likelihood it will develop adversely and cost the insurer more money. A closed claim significantly reduces that potential, in most cases to zero.[90] Closed claims also benefit the insured by allowing the insured to receive medical treatment, repair damaged property and recover from the loss. Claims departments look for ways to increase claim settlement rates to achieve this mutual benefit.

Despite the benefits of such improvements, they can have an adverse effect on the projection of unpaid claims if not explicitly taken into consideration. Take for example the situation where a company has implemented a new strategy to increase claim settlement rates in the current year. This will result in higher than average claim payments being made in the current year and will cause the paid loss development factors at the latest evaluation date (i.e., last diagonal) to be higher than in prior evaluation dates along the diagonals. Giving weight to this higher factor in the application of loss development factors to paid losses (that are themselves higher than normal) will result in the over-projecting of ultimate losses and therefore the overestimate of unpaids.

Similarly, a claims department may also experience a reduction in claim settlement rates for numerous reasons, such as reductions in staffing levels, growth in a book without a commensurate increase in claim staff, or influx of claims resulting from the occurrence of a catastrophe, among others. A reduction in claim settlement rates could result in underestimating unpaid claims because the last diagonal of loss development factors and current evaluation of paid losses are suppressed relative to prior years.

A review of claim closure rates will help to identify these trends, thereby enabling the actuary to consider the impact on the analysis of unpaid claims.

Table 50 shows the triangle of claim closure rates for Fictitious' homeowners line of business.

[90] There is always the chance that a claim could reopen.

TABLE 50

Data from 2018 Annual Statement for Fictitious Insurance Company,
Data from Schedule P – Part 5A – Homeowners/Farmowners

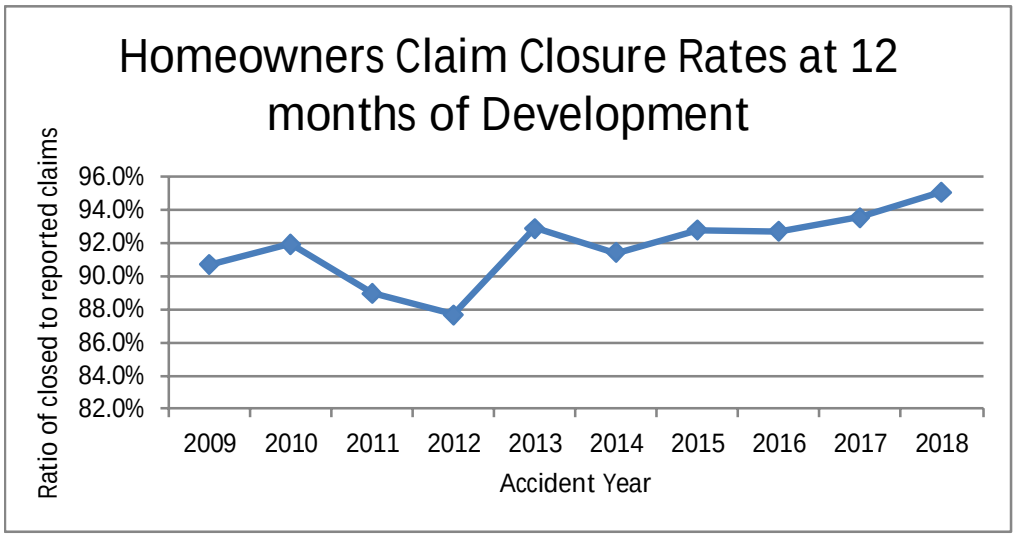
Calculation of Claim Closure Rate (Total Claims Closed from Section 3 minus Section 2, divided by Total Reported Claim Counts from Section 3)

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months
2009	90.7%	97.9%	98.8%	98.8%	99.2%	99.6%	99.6%	99.6%	99.6%	99.6%
2010	91.9%	98.4%	99.2%	99.6%	99.6%	99.6%	99.6%	99.6%	99.6%	
2011	88.9%	97.7%	99.1%	99.5%	99.5%	99.5%	99.5%	99.5%		
2012	87.7%	98.1%	98.6%	99.5%	99.5%	99.5%	99.5%			
2013	92.9%	98.6%	99.5%	99.5%	99.5%	99.5%				
2014	91.4%	98.4%	99.0%	99.5%	99.5%					
2015	92.8%	98.7%	99.3%	99.7%						
2016	92.7%	99.0%	99.7%							
2017	93.6%	99.1%								
2018	95.1%									

The above was computed by taking total reported counts in Section 3 of Part 5A and subtracting the open counts in Section 2 to compute a triangle of closed counts. We then took the resulting closed count triangle and divided by the reported count triangle in Section 3.

Depending on the line of business, generally, only the first two to three columns are relevant to the actuary, as claim adjusters tend to have the biggest impact on claim settlement in the first couple of years of development. After that, it is often difficult to have a widespread effect on the open claims. For a short-tailed line of business such as homeowners, actuaries will tend to focus on the first 12 months in the above triangle. The following provides a graphic depiction of the first 12 months of settlement rates.

TABLE 51



From the chart we see a slight uptick in the claim settlement rates since 2016. While the change is relatively benign, it would be important to talk to Fictitious' management to see if there are any internal or external changes than might impact the rate at which homeowners claims are being settled. Additionally, it would be interesting to inquire as to the changes that occurred in 2011 and 2012, as there appears to have been a large drop in the rate at which claims were being closed. If, for example, there was an uptick in weather-related claims during 2012, it may be that Fictitious' claims department had some difficulties keeping pace with the large number of claims reported during 2012.

Closed With Pay (CWP) Ratios

These represent the ratio of CWP claims to total closed claims. Companies may experience changes in the rate that claims are closed without payment. It is important for the actuary to understand the implications of changes in CWP rates on the unpaid claim analysis. While an increasing trend in CWP rates is generally a good sign, it may result in increases in reopened claims in the future or have other effects that are not easily discernible in the loss data.

Table 52 provides the ratio of claims closed without payment to total closed claims for Fictitious. While we can show the ratio of CWPs as well, which is simply one minus the ratios shown within Table 52, we thought the ratios of closed without pay more clearly highlights some changes in the Company's experience.

TABLE 52

Data from 2018 Annual Statement for Fictitious Insurance Company,
Data from Schedule P – Part 5A – Homeowners/Farmowners
Ratio of Claims Closed Without Payment to Total Closed Claims

Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
2009	1%	16%	15%	15%	15%	15%	16%	16%	16%	16%	
2010	14%	14%	14%	14%	14%	13%	13%	13%	13%		
2011	16%	16%	16%	16%	16%	16%	16%	16%			
2012	13%	13%	13%	13%	13%	13%	12%				
2013	9%	9%	9%	9%	9%	9%					
2014	8%	9%	8%	8%	8%						
2015	8%	8%	8%	8%							
2016	9%	9%	9%								
2017	8%	8%									
2018	6%										

As displayed above, there appears to have been a drop in claims closed without pay between the 2011 and 2013 accident years from around the 15% level at 12 months of development to about the 8% level for accident years 2013 through 2017 at 12 months. There seems to be a further decline in accident year 2018, although to a much lesser degree. Inquiries would have to be made of company management to understand the cause for these trends and ascertain the impact on future loss and LAE development.

Claim Frequency

The rate of claim frequency can be determined using Schedule P data by dividing claim counts in Part 5 by earned premiums in Part 1. This can be useful in identifying changes in the rate claims are closed and reported relative to the exposure. However, we note that the exposure here is influenced by rate changes. Therefore, similar to loss ratios, these rates can go up or down depending on pricing changes. Schedule P does not provide the raw exposure base (e.g., home years for homeowners, car years for auto, payroll or employee count for workers' compensation). As a result, one cannot identify pure loss cost trends using this data without making manual adjustments for changes in rate.

Average Claim Severities

In addition to providing statistics based solely on counts, the actuary can also analyze severities using the loss data from Parts 2 through 4 and the count data in Part 5. The actuary can analyze the following:

- Average closed claim severities, which are computed as the ratio of net paid loss and DCC to direct plus assumed claims closed with payment (or total closed claim counts). The numerator in the equation comes from Schedule P, Part 3, and the denominator comes from Schedule P, Part 5, Section 1 (or Section 3 minus Section 2 for total closed claim counts).
- Average case outstanding severities, which are computed as the ratio of net case outstanding loss and DCC to direct plus assumed open counts. The numerator in the equation comes from Schedule P, Part 2 minus Part 3 minus Part 4, and the denominator comes from Schedule P, Part 5, Section 2.
- Average reported claim severities, which are computed as the ratio of net reported loss and DCC to direct plus assumed reported counts. The numerator in the equation comes from Schedule P, Part 2 minus Part 4, and the denominator comes from Schedule P, Part 5, Section 3.

The above enables the actuary to identify trends in the cost of insurance claims. Such trends may be inflationary, a result of law changes, attributed to one-time catastrophic claims, due to changes in deductibles or retentions, or caused by internal factors, among others.

As with claim counts, actuaries generally look for changes in the first few years of development, as these changes tend to have the biggest impact on reserve levels.

A review of average case reserves is particularly useful to the reserving actuary. Changes in case reserve levels may be a sign that the company has strengthened or weakened its case reserves. For example, if we were to compute a triangle of average case outstanding severities and observe a decrease along the last diagonal relative to the prior diagonal, then that may be a sign that the company has weakened its case reserves.[91] Of course, this observation would warrant discussion with the company's claims department. However, assuming there was a weakening in case reserves, use of the reported loss development method to project unpaid loss, without adjustment to reflect the weakening, may understate the reserve need.

To be more specific, loss development methods assume that the past is predictive of the future. When a company weakens reserves, the reported losses are at a lower level than they had been at the past. Therefore, application of prior average loss development factors to current, lower loss amounts, will tend to understate the ultimate loss estimate and therefore the reserve need. The effect is similar to what happens to development methods using paid

[91] The last diagonal represents average case outstanding reserves corresponding to the accident years in the left most column, as of the current evaluation date, which is December 31, 2018 for Fictitious. The prior diagonal is one year prior to the current evaluation (i.e., December 31, 2017 for Fictitious).

loss data when there has been a change in the rate claims are being closed. A decrease in claim settlement rates (i.e., "slowdown") along the last diagonal will result in an understatement of the reserve need absent adjustment to the paid loss triangle or paid loss development methods. The opposite can happen when there has been a strengthening in case reserves or a speed-up in claim settlement. While not the topic of this publication, there are loss reserving methods that explicitly adjust for changes in case reserve adequacy and claim closure rates, such as those described in the Berquist-Sherman paper.[92]

Table 53 provides the average case outstanding reserves for Fictitious' homeowners line of business:

TABLE 53

Data from 2018 Annual Statement for Fictitious Insurance Company,
Data from Schedule P – Parts 2 through 5 – Homeowners/Farmowners

Average Net Case Outstanding Loss and DCC Severities
(Net Case Outstanding Loss and DCC / Open Claim Counts)

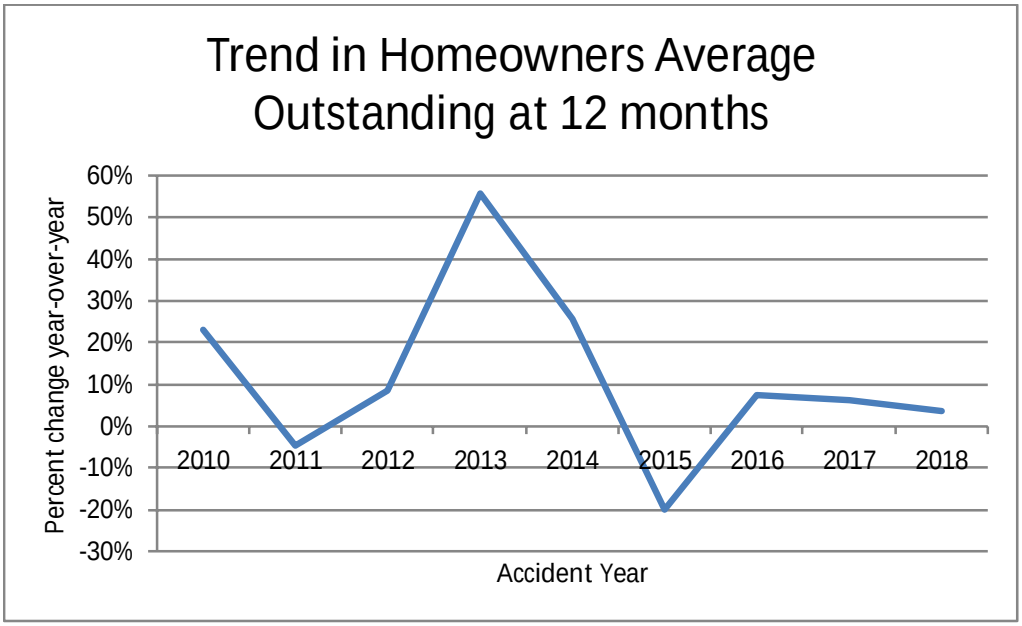
Years in Which Losses Were Incurred	12 Months	24 Months	36 Months	48 Months	60 Months	72 Months	84 Months	96 Months	108 Months	120 Months	120 Months
2009	7,350	10,800	10,677	6,000	5,000	7,000	5,000	2,000	1,000	–	
2010	9,053	16,750	19,000	21,000	12,000	7,000	5,000	2,000	1,000		
2011	8,636	18,600	23,500	25,000	14,000	9,000	5,000	2,000			
2012	9,360	13,750	8,667	9,000	11,000	12,000	–				
2013	14,571	30,333	45,000	26,000	15,000	8,000					
2014	18,333	37,000	30,500	34,000	18,000						
2015	14,684	32,250	37,500	40,000							
2016	15,789	42,000	61,000								
2017	16,789	41,333									
2018	17,429										
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Ending			10,966	10,844	11,243	14,833	17,920	17,071	17,774	19,194	18,909
Annual Trend				-1%	4%	32%	21%	-5%	4%	8%	-1%

The bottom row shows the trend across all accident years combined, over each evaluation year. We see that in 2016 and 2017, average reserve levels increased by about 4% and 8%, respectively. However, in 2018, reserve levels decreased by 1%. As a result of this decline, the actuary may see ultimate loss and DCC estimates based on reported methods coming in lower than the ultimate loss and DCC estimates based on paid methods.

[92] Berquist, J.R.; and Sherman, R.E., "Loss Reserve Adequacy Testing: A Comprehensive, Systematic Approach," Proceedings of the Casualty Actuarial Society (PCAS) LXIV, 1977, pp.123-184.

Looking down the column at the first 12 months, we see a significant increase in case reserve between 2012 and 2013. This is a bit more obvious graphically. The following provides the change in average case reserves, from one accident year to the next, going down the 12-month development column.

TABLE 54



A large spike is seen in 2013. The approximate 56% increase was computed by taking the average case outstanding severity for accident year 2013 of $14,571 and dividing by the average for accident year 2012 of $9,360 to obtain the year-over-year change of 1.56 (+56%).

Despite the large increase in 2013 and subsequent sharp decline in 2015, the year-over-year trend rates in the first 12 months of development appear to have been on a slight decline from 8% to 4% between 2016 and 2018.

As previously mentioned, the value of these analytics is to identify trends and generate discussion with management so that the actuary can appropriately consider them in the analysis of unpaid claims.

Reasonableness Tests

In addition to the raw trends, actuaries also use Part 5 data to provide checks on the reasonableness of unpaid claim estimates. For example, actuaries can compute the following statistics and compare the results to see if the trends across the accident years are in alignment with what they expect:

- Average claim frequency – the ratio of the ultimate claim count estimate by accident year to the corresponding earned premium
- Average ultimate severity – the ratio of the ultimate loss and DCC estimate by accident year to the corresponding estimate of ultimate claim counts
- Average unpaid claim severity – the ratio of the unpaid loss and DCC estimate by accident year to the corresponding estimate of unpaid claims

The above can be computed using direct plus assumed loss and DCC estimates in addition to the net estimates.

Uses of Part 5 in Estimating Unpaid Claims

Before turning to Part 6, we should add that actuaries also use Part 5 for purposes of projecting ultimate loss and DCC estimates. These methods are referred to as "counts and averages" methods. Projections are made by developing average paid and reported loss severities to ultimate and applying them to estimates of ultimate claim counts using closed and reported claims count development methods. These methods can be valuable when adjusting for observed trends in each of their specific components.

SCHEDULE P – PART 6

Part 6 provides cumulative premiums earned as of December 31 for each of the last 10 calendar years. The first year of report includes premiums earned in the calendar year. Moving left to right, subsequent years show premiums earned after positive or negative adjustments from premium audits, retrospectively rated policies, lags in reporting or accounting for premiums, among others. Part 6 provides the information needed to develop earned premium to its ultimate amount using methods similar to those used to develop ultimate loss and DCC (i.e., using traditional, triangular development methods). Part 6 is provided for the following lines of business, as these lines tend to be the ones subject to the aforementioned adjustments:

C – Commercial Auto Liability/Medical
D – Workers' Compensation
E – Commercial Multiple Peril
H – Section A – Other Liability – Occurrence[93]
H – Section B – Other Liability – Claims-Made
M - International

[93] Business reported as an aggregate write-in for other lines of business in the State Page is included here (either as occurrence or claims-made, depending on the coverage written).

N – Reinsurance – Nonproportional Assumed Property[94]
O – Reinsurance – Nonproportional Assumed Liability[95]
P – Reinsurance – Nonproportional Assumed Financial Lines[96]
R – Section A – Products Liability – Occurrence
R – Section B – Products Liability – Claims-Made

The premium displayed in Part 1 of Schedule P is that which is earned during each specified calendar year; it is not updated for subsequent adjustments to the specified exposure year premium. It is equal to the left-most diagonal in Part 6 plus adjustments that come through during the specified calendar year to premiums on prior exposure years. Adjustments made after the first year of report are included in the appropriate column of Part 6.

Workers' compensation provides a good example of a line that is subject to premium adjustment. At inception, the premium charged for a workers' compensation policy is determined by applying a rate to an estimate of the payroll (exposure) for the policy term. At the end of the year, or shortly thereafter, the actual payroll is known. The insurance carrier, however, has determined its premium earnings on the basis of the estimated premium. As a result, the premium figure will change from its initial amount, and this change is recorded in Part 6.

Additionally, the exposure base used to determine the premium can be subject to audit by the insurance carrier. For example, an insurance company can verify that payroll amounts used in determining an insured's workers compensation premium, or revenue figures used in computing an insured's general liability premium, are accurate and complete. Differences uncovered through these audits will emerge as premium development in Part 6.

The one area where we tend to see the most development on earned premium is retrospectively rated insurance policies. Under these policies, the insured is charged a base premium that is adjusted over time based on the insured's loss experience based on a formula. The formula incorporates tax multipliers and expense factors and typically imposes a minimum and maximum premium amount.

Insurance companies record the claim experience associated with retrospectively rated insurance policies within Schedule P, and the loss reserve estimates typically include a provision for these claims. Without adjustment for the additional premium income expected under these policies, a company's surplus would be understated. This adjustment comes in as

[94] Property includes fire, allied, ocean marine, inland marine, earthquake, group, credit and other A&H, auto physical damage, boiler and machinery, burglary and theft and international property.
[95] Liability includes farmowners, homeowners and commercial multiperil; medical professional liability workers' compensation; other liability; products liability; auto liability; aircraft (all peril); and international liability.
[96] Financial includes financial guaranty, fidelity, surety, credit and international financial.

an asset on line 15.3 of page 2 of the Annual Statement titled “Accrued Retrospective premium.”

Estimates of future premium can be determined by developing the earned premiums in Part 6 using development methods. However, as with reliance on the rest of Schedule P for projection purposes, exclusive reliance on Part 6 should not be made without having a good understanding of its contents.

SCHEDULE P – PART 7

Part 7 is optional and completed only by those companies using the loss sensitive adjustment in the RBC calculation. It provides premium and loss information on loss sensitive contracts. It is broken into two parts: A for Primary Contracts (i.e., direct written business) and B for Reinsurance Contracts (i.e., assumed business). Parts A and B each have the same five sections:

- Section 1 provides net loss and LAE unpaid and net written premium on loss sensitive contracts, relative to all contracts written by the company, for each Schedule P line of business in total.
- Section 2 provides incurred loss and DCC reported at year-end on loss sensitive contracts in the same format as Schedule P, Part 2.
- Section 3 provides loss and DCC IBNR at year-end on loss sensitive contracts in the same format as Schedule P, Part 4.
- Section 4 provides net earned premiums reported at year-end on loss sensitive contracts in the same format as Schedule P, Part 6.
- Section 5 provides net reserves for premium adjustments and accrued retrospective premiums for each of the last 10 years in which the policies were issued, evaluated at each of the last 10 years.

The information provided in Part 7 is on a policy year basis.

As noted, the primary use of this exhibit is for RBC purposes. The Reserve RBC and Written Premium RBC are adjusted to reflect the fact that loss experience under loss sensitive contracts is shared in whole or in part with the insured. As such, the risk of adverse loss development is also shared with the insured. The insurance company receives a discount to its RBC reserve charge to reflect this reduction in risk. This discount is computed separately by line of business. Columns 3 and 6 of Schedules A and B provide the percentage of loss and LAE reserves and written premiums by line of business for loss sensitive contracts. Column 3 provides the distribution of reserves, and column 6 provides the distribution of net written premium.

Examples of how this information is used in computing RBC are contained in Part IV. Statutory Filings to Accompany the Annual Statement of this publication.

SCHEDULE P INTERROGATORIES

The Schedule P Interrogatories are a series of seven questions that the insurance company is required to answer to provide further insight into the information reported in Schedule P. We will briefly discuss those interrogatories that are most widely referred to by property/casualty actuaries.

Question 1 pertains to extended reporting endorsements (EREs) arising from death, disability or retirement (DDR). EREs essentially turn a medical professional liability claims-made policy into an occurrence policy upon the policyholder's death, disability or retirement. In the 1990s, DDR endorsements were issued for free and known as "free tail coverage" as a marketing effort by medical insurers to attract physicians. Many such DDR extended reporting period endorsements are still offered for free.

Question 1 has six parts, the first of which pertains to whether the company issues such endorsements for free or at a reduced rate. The remaining five parts serve to identify where and how the company reports the DDR reserve: as unearned premium or loss reserve, claims-made or occurrence, etc. The main point is to make sure these policies have been reserved for somewhere in the company's financial statements, either as losses or unearned premium.

Question 2 asks whether LAE are reported as DCC and A&O as per the definitional change effective January 1, 1998. This is relevant to the actuary or other user who may be relying on Schedule P data to perform reserve adequacy tests.

Question 4 requires disclosure on whether the company's recorded loss and LAE reserves are net of non-tabular discount and reminds the preparer of the Annual Statement that:

- Disclosure of non-tabular discount must be included in the Notes to Financial Statements.
- Discounting is only allowed if the company has permission from its state insurance regulator.
- Schedule P must be prepared gross of non-tabular discounts, with the amount of discount reported in Schedule P – Part 1, Columns 32 and 33.
- Support for the amount of discount must be available for regulatory review upon request.

In question 6, the company is required to indicate whether the company reports claim counts on a per-claim or per-claimant basis in Schedule P. This, along with whether the reporting convention has changed over time, is relevant in interpreting trends in claim frequency and severity. It is also relevant when assessing reserve adequacy using counts and averages (frequency and severity) methods.

Question 7 is the most important and aligns most directly with the use of Schedule P. It asks if there are any changes or if there is anything special that the user should be aware of if the

user decides to rely on the data provided in Schedule P to assess the adequacy of the recorded loss and LAE reserves. If the answer is yes, disclosure of such is required.

INTERCOMPANY POOLING AND SCHEDULE P

It is important to know that intercompany pooling differs from intercompany reinsurance.

According to SSAP No. 63, "Intercompany pooling arrangements involve establishment of a conventional quota share reinsurance agreement under which all of the pooled business is ceded to the lead entity and then retroceded back to the pool participants in accordance with their stipulated shares."[97] Under intercompany pooling, business underwritten by affiliated insurance companies is consolidated by the "lead" company and the premiums, losses and related expenses are shared based on a fixed and predetermined percentage per the agreement.

Intercompany reinsurance refers to a transaction whereby one company (the reinsurer) agrees to indemnify the other (the ceding company) against all or part of the loss that the latter may sustain under the policies that it has issued. Intercompany reinsurance is accounted for in the same way as third-party reinsurance, subject of course to statutory accounting rules. Very broadly, cessions to affiliated reinsurers under straight reinsurance agreements serve to reduce gross premiums, losses and related expenses.

The treatment of intercompany pooling in Schedule P is different from that of a typical reinsurance agreement. Gross losses are combined or "pooled" and then shared based on the pooling percentage of each member company, regardless of the policy issuing entity. Net losses are treated in the same manner in that they are first pooled and then shared based on each company's pooling percentage. Very simply, assume Companies A, B and C participate in intercompany pooling, with 60%, 20% and 20% participation, respectively. If each company has $100 of loss reserves on a direct basis and cedes $30 to outside reinsurers, the recorded reserves in Schedule P of Companies A, B and C would be $180, $60 and $60 on a gross of reinsurance basis and $126, $42 and $42 on a net of reinsurance basis, respectively. That is, the pooled gross ($300) and net amounts ($210) are shared based on each company's participation rates. This is summarized in Table 55.

[97] NAIC Accounting Practices and Procedures Manual, March 2019, SSAP No. 63, Underwriting Pools, page 63-3, paragraph 7.

TABLE 55

Reporting in Schedule P				
	Company A (Lead)	Company B (Non-Lead)	Company C (Non-Lead)	Total
Total Gross	180	60	60	300
Total Net	126	42	42	210

While Schedule P for companies that operate under an intercompany pooling arrangement is prepared on a pooled basis, as exemplified above, other schedules and exhibits within the Annual Statement treat intercompany pooling as if it is a typical reinsurance arrangement. Therefore, using the above example, if Company A were the lead in the intercompany pool, then Company A would have $100 in direct loss reserves, plus $70 assumed from each of Companies B and C, for a total of $240 in gross reserves. The $70 in assumed loss reserves from each non-lead company is after cessions to outside reinsurance.

For each non-lead company, the amount of gross loss reserves is $100 in direct reserves plus the amount assumed after the lead company cedes through the intercompany reinsurance relationship. The amount of business in the intercompany pool is $300 of direct loss reserves minus $90 (=$30*3) of ceded business, for a total of $210 net reserves. The $210 pooled net loss reserve is shared 60%, 20%, 20%, so each non-lead gets $42. Thus, the total gross loss reserves for each non-lead is $100 in direct plus $42 of intercompany pooled loss reserves for a total of $142. These amounts are summarized in Table 56.

TABLE 56

Reporting in Annual Statement Exhibits and Schedules other than P				
	Company A (Lead)	Company B (Non-Lead)	Company C (Non-Lead)	Total
Total Gross	240	142	142	524
Total Net	126	42	42	210

Notice that on a net basis, the amounts are the same in all of the exhibits and schedules within the Annual Statement. However, on a gross basis, exhibits and schedules other than Schedule P essentially double count the cessions to intercompany pooling, whereas Schedule P nets them out.

The fact that Schedule F does not show IBNR on an assumed basis, the double counting effect of pooling, as well as the fact that some companies have other intercompany reinsurance relationships outside the intercompany pooling relationship, complicates the reconciliation

between Schedules within the Annual Statement to Schedule P. This is the main reason we have not used Fictitious in our examples.

We used loss reserves in our example. However, it is important to note that pooling percentages apply to the premium, loss, expense and claim count data within Schedule P. Therefore, all figures provided in Part 1 and the triangles provided in Parts 2 through 7 are provided after intercompany pooling. If one wanted to determine total premium, loss, expense and/or claim count data for the pool in aggregate, all one would need to do is divide the figures in Schedule P for a pool member by its intercompany pooling percentage in Schedule P, Part 1, column 34.

Intercompany pooling percentages can change over time, based on a particular group's business strategy. Schedule P is generally restated retroactively when there is a change in intercompany pooling.

Ignoring differences in underwriting expense structure, underwriting income for members of an intercompany pool is shared based on their respective pooling percentage. Each company will likely have its own underwriting expense structure, as well as structure for investment and other income, therefore policyholders' surplus will differ by company and may not align with the companies' particular pooling percentages. However, pooling percentages are generally determined with consideration of the level of policyholders' surplus at the legal entity level; in general, the larger the surplus, the greater the share.

As with reinsurance, companies use intercompany pooling for surplus relief. Under intercompany reinsurance, an individual company provides the relief. Under intercompany pooling, the members of the pool utilize the capital and surplus of all the companies, rather than each individual company.

Actuaries often think of intercompany pooling as advantageous over intercompany reinsurance, given that the unpaid claim analysis for both gross and net reserves can be calculated on pooled (combined) basis, as opposed to having to perform separate analyses of gross reserves for each entity. However, many companies use intercompany reinsurance as opposed to intercompany pooling.

In general, intercompany pooling should be easier to administer than having to maintain separate intercompany reinsurance agreements between affiliates. Over time, one table of pooling percentages can be updated as things change, therefore intercompany pooling can be more flexible. Intercompany pooling also makes it easier for a rating agency to review the financial condition of a group and assign a single rating. The group can then market its rating across all member underwriting companies. We expect that intercompany pooling would also facilitate regulatory review at a group level versus each individual company.

PART IV. STATUTORY FILINGS TO ACCOMPANY THE ANNUAL STATEMENT

INTRODUCTION TO PART IV

Insurance companies are required to file numerous documents with state insurance regulators each year, either included within or supplemental to the Property/Casualty Annual Statement. These annual filings include those listed in the Official NAIC Annual Statement Instructions Property/Casualty,[98] such as the Statement of Actuarial Opinion (SAO), Actuarial Opinion Summary Supplement (AOS), Supplemental Compensation Exhibit, Insurance Expense Exhibit (IEE), Supplemental Investment Risks Interrogatories, Financial Guaranty Insurance Exhibit and others such as the National Association of Insurance Commissioners (NAIC) Insurance Regulatory Information System (IRIS) ratio and Risk-Based Capital (RBC) calculation. Many of these filings serve as a means for regulators to obtain a relatively quick view of an insurance company's financial health, thereby enabling regulators to prioritize those insurance companies requiring immediate attention.

This section addresses the filings that tend to be used the most by property/casualty actuaries, namely:

- SAO
- AOS
- IEE
- RBC
- IRIS

We will discuss the purpose and important aspects of each filing. Many of these filings are addressed in considerable detail in other publications, and the NAIC has issued instructions, manuals and/or software applications that provide the preparer of these filings with authoritative guidance. This section is not intended to replace those readings or provide instructions on how to prepare those filings. Rather, we will limit our discussion to the purpose of each and a general overview of how they are prepared.

[98] 2018 NAIC Annual Statement Instructions Property/Casualty, pages i-v.

CHAPTER 16. STATEMENT OF ACTUARIAL OPINION

OVERVIEW

The Statement of Actuarial Opinion (SAO) provides the opinion of a qualified actuary on the reasonableness of the loss and loss adjustment expense (LAE) reserves recorded by a property/casualty insurance company as of December 31 each year. It is filed with the Annual Statement, either included or attached to page 1 of the Annual Statement. The SAO must be prepared by a qualified actuary, as defined by the National Association of Insurance Commissioners (NAIC),[99] who is appointed by the company's board and then referred to as the appointed actuary.[100]

Certain companies may qualify for an exemption from the SAO requirement. Possible exemptions include the following:

- Size of the insurer (less than $1 million of total gross written premiums during a calendar year and less than $1 million of total gross loss and LAE reserves at year-end)
- Insurers under supervision or conservatorship
- Nature of business written
- Insurers under financial hardship (if the cost of the SAO is greater than either 1% of surplus or 3% of gross written premiums during the calendar year within which the exemption is requested)

Simply meeting one of the above criteria does not provide automatic exemption. To qualify, the insurer has to file for exemption with its domiciliary commissioner. It is at the discretion of the domiciliary commissioner to decide whether to exempt a company from the SAO requirement.

The main purposes of the SAO are the following:

[99] A qualified actuary is defined by the NAIC as "a person who meets the basic education, experience and continuing education requirements of the Specific Qualification Standard for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement, as set forth in the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States, promulgated by the American Academy of Actuaries, and is either: (i) A member in good standing of the Casualty Actuarial Society, or (ii) A member in good standing of the American Academy of Actuaries who has been approved as qualified for signing casualty loss reserve opinions by the Casualty Practice Council of the American Academy of Actuaries" 2011 NAIC Annual Statement Instructions Property/Casualty, page 9.

[100] The 2011 NAIC Annual Statement Instructions Property/Casualty go on further by saying that the requirements of the company's domiciliary state may permit individuals to issue the SAO despite not meeting the definition of qualified actuary per the NAIC. In these instances, a letter from the state must be attached to the SAO indicating that the individual meets the state's requirement to issue SAOs. Throughout this text we will use the terms "qualified actuary" and "appointed actuary" to encompass these individuals.

- Provide the appointed actuary's opinion on the reserves specified within the scope of the SAO.
- Inform the reader, in particular regulators, of significant risk factors and/or uncertainties with respect to those reserves.
- Advise whether those risks and uncertainties are reasonably expected to lead to material adverse deviation in the reserves.

There is considerable guidance for the actuary in issuing the SAO. Every appointed actuary should read and be familiar with the most current versions of the following:

- Qualification Standards, as set forth by the American Academy of Actuaries (AAA)
- NAIC Instructions for the SAO
- AAA Committee on Property and Liability Financial Reporting (COPLFR) Practice Note on Statements of Actuarial Opinion on Property and Casualty Loss Reserves (COPLFR P/C Practice Note)
- NAIC Regulatory Guidance On Property and Casualty Statutory Statements of Actuarial Opinion Prepared by the NAIC's Casualty Actuarial and Statistical (C) Task Force[101]
- Actuarial Standards of Practice (ASOP), including but not limited to:
    - ASOP No. 20. Discounting of Property/Casualty Unpaid Claim Estimates (September 2011)
    - ASOP No. 23. Data Quality
    - ASOP No. 36. Statement of Actuarial Opinion Regarding Property/Casualty Loss and LAE Reserves
    - ASOP No. 41. Actuarial Communications
    - ASOP No. 43. Property/Casualty Unpaid Claim Estimates
- Applicable state laws, in particular with respect to reserve requirements, SAO requirements, discounting, etc. (the Property/Casualty Loss Reserve Law Manual published annually by the AAA provides a compilation of this material) [102]
- SSAP No. 55, Unpaid Claims, Losses and Loss Adjustment Expenses
- SSAP No. 62R, Property and Casualty Reinsurance
- SSAP No. 65, Property and Casualty Contracts

The SAO is organized into four required sections:

1. Identification
2. Scope
3. Opinion
4. Relevant comments

[101] This is updated annually and typically included as an appendix to COPLFR P/C Practice Note.
[102] Applicable laws and regulations supersede any applicable ASOPs.

Each section must be included and clearly identified within the SAO.

The SAO also contains two exhibits, A and B. Exhibit A provides the recorded amounts associated with the items identified in the scope section, generally on a direct plus assumed and net basis. Exhibit B provides relevant disclosure items with respect to the net reserves identified in the scope section, as identified in the relevant comments section. For example, loss and LAE reserves for asbestos are disclosed in Exhibit B on a net of reinsurance basis. There is no separate exhibit within the SAO showing asbestos reserves on a gross of reinsurance basis. Differences between the net and gross (direct plus assumed) amounts reported in Exhibit B may be discussed in the relevant comments section.

While there are other publications on the CAS Exam 6 U.S. Syllabus of Basic Education that cover the SAO, there is not a "real" SAO on the Syllabus to bring the instructions to life for the student. As a result, we have created a SAO for Fictitious Insurance Company to illustrate the application of the SAO instructions in practice. Fictitious' SAO was issued by an imaginary actuary named Mr. William H. Smith, who is a consulting actuary with the make-believe firm, WS Actuarial Consulting. Smith's opinion is included in of this publication and should be read side-by-side with this chapter.

The Fictitious SAO is the author's interpretation of the NAIC instructions as they might apply to Fictitious. It should not be taken as authoritative guidance on format or content of the SAO.

The following provides a summarized view of each of the four sections of the SAO and how Fictitious' appointed actuary responded to each required section in his 2018 SAO for the company.

IDENTIFICATION

The identification section of the SAO provides the actuary's name and credentials, the actuary's qualifications for issuing the SAO, the actuary's relationship to the company, and the date the actuary was appointed by the company's board of directors (or its equivalent) to issue the opinion. This section typically includes a statement identifying the intended purposes and users of the opinion, consistent with ASOP 36 requirements.

For Fictitious, the 2018 SAO was issued by Mr. William H. Smith, who is a Fellow of the Casualty Actuarial Society and Member, American Academy of Actuaries, and is associated with the firm of WS Actuarial Consulting. He was appointed by the company's board of directors on September 7, 2018. At the time of issuance of his opinion (February 24, 2019), Smith met the qualification standards to issue SAOs.

The intended purpose of Smith's opinion was to satisfy the requirements of the NAIC. The intended users were the company's management, the directors of its board and state regulatory officials.

SCOPE

The scope section identifies the reserve items upon which the actuary is giving an opinion as well as the accounting basis for those reserves. The reserve items include:

- Loss and LAE reserves
- Retroactive reinsurance assumed reserves
- Unearned premium reserves for Property and Casualty ("P&C") Long-Duration Contracts[103]
- Unearned premium reserves for extended reporting endorsements, such as those included in Schedule P Interrogatory No. 1 of the company's Annual Statement
- Other reserve items for which the actuary is providing an opinion

The scope also identifies the "review date," which is defined in ASOP 36 as "the date (subsequent to the valuation date) through which material information known to the actuary is included in forming the reserve opinion."[104] If no such date is explicitly disclosed, it is likely to be assumed by the reader of the opinion that the review date is the date the opinion is signed.

It also contains a statement regarding who provided the data relied upon by the actuary in forming the opinion and that either the actuary performed a reconciliation of that data, or reviewed a reconciliation prepared by the company, to Schedule P of the company's Annual Statement.

If the company participates in intercompany pooling, the actuary may wish to disclose this and the basis for reconciling data used in the actuary's analysis to Schedule P.

Further, regulatory guidance suggests that the scope section for each pooled company provide information about the pooling arrangement, including the intercompany pooling percentage for the company.

There are special requirements for opinions on non-lead companies operating under an intercompany pooling arrangement in which the lead company retains 100% of the pooled reserves. We refer the reader to the NAIC opinion instructions and COPLFR Practice Note for further guidance.

[103] P&C Long Duration Contracts are defined on page 10 of the NAIC SAO Instructions as "contracts (excluding financial guaranty contracts, mortgage guaranty contracts and surety contracts) that fulfill both of the following conditions: (1) the contract term is greater than or equal to 13 months; and (2) the insurer can neither cancel the contract not increase the premium during the contract term. These contracts are subject to the three tests of SSAP No. 65-Property and Casualty Contracts of the NAIC Accounting Practices and Procedures Manual."
[104] Actuarial Standards Board of the American Academy of Actuaries, "Actuarial Standard of Practice No. 36, Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves," December 2010, page 3.

The reserve items on which Smith opined for Fictitious are presented in Exhibit A of his 2018 SAO. As displayed on Exhibit A, Smith opined on net loss and LAE reserves in lines 1 and 2, totaling $51,557,000 as of December 31, 2018. The amounts in lines 1 and 2 of Exhibit A reconcile to lines 1 and 3, respectively, of the Liabilities, Surplus and Other Funds page of the 2018 Annual Statements.

Smith also opined on total direct plus assumed (or gross) loss and LAE reserves of $61,699,000, as shown in lines 3 and 4. The amounts in lines 3 and 4 reconcile to Schedule P, Part 1, Summary, columns 13 plus 15, and columns 17, 19 and 21, respectively.

As disclosed in the Notes to Financial Statements (see Chapter 10. Notes to Financial Statements) and displayed in Exhibit A of the SAO, Fictitious did not have any retroactive reinsurance assumed as of December 31, 2018. Nor were there any other loss reserve items on which Smith expressed an opinion.

Smith disclosed his "review date" as January 28, 2019. This means that information received through January 28, 2019, was relevant to his analysis of unpaid claims and his opinion on the company's loss and LAE reserves. Information after that date, to the time he signed the opinion on February 24, 2019 (see the signature line of the opinion), was not relied on by Smith in forming his opinion.

The scope section also provides a statement from Smith that he reconciled the data that he relied upon for purposes of forming his opinion to Schedule P, Part 1, of Fictitious' 2018 Annual Statement.

OPINION

The opinion section provides exactly what the name says, the actuary's opinion with respect to the reserves identified in the scope section. The actuary has five options in terms of the type of opinion, as outlined in ASOP 36. These are:

1. Reasonable: if the recorded reserve lies within the actuary's range of reasonable unpaid claim estimates
2. Inadequate or deficient: if the recorded reserves are below what the actuary deems to be reasonable
3. Excessive or redundant: if the recorded reserves are above what the actuary deems to be reasonable[105]
4. Qualified: if the actuary is unable to issue an opinion on certain items and those items are believed to be material
5. No opinion: if the actuary is unable to conclude on the reasonableness of the recorded reserves

[105] Ibid., page 9.

Note that in accordance with ASOP 36, the actuary should disclose the minimum amount that he or she deems reasonable when issuing an inadequate or deficient opinion.[106] Similarly, the actuary should disclose the maximum amount deemed to be reasonable when issuing an excessive or redundant opinion.

The actuary is also required to state whether the recorded reserves identified in the scope section meet the requirements of the insurance laws of the state the company is domiciled in and are computed in accordance with actuarial standards.

Additionally, if use was made of the work of another actuary, such as for pools and associations, for a subsidiary, or for special lines of business, in forming the SAO, the other actuary must be identified by name and affiliation within the opinion section. The appointed actuary cannot simply rely on another actuary's opinion. The appointed actuary needs to perform enough analysis on the other actuary's work to issue an unqualified opinion on the total reserve amounts listed in Exhibit A. A situation where the actuary may make use of another's work is for reserves assumed by the company for its participation in underwriting pools and associations. ASOP No. 36 provides the relevant guidance, and the COPLFR P/C Practice Note provides good examples of how to handle this situation in practice.[107]

The 2018 SAO for Fictitious states the following:

"In my opinion, the amounts carried in Exhibit A on account of the items identified:

- Make a reasonable provision for all unpaid losses and loss adjustment expenses, gross and net as to reinsurance ceded, under the terms of the Company's contracts and agreements
- Are computed in accordance with accepted standards and principles
- Meet the requirements of the insurance laws of Florida"[108]

Note that Smith opined on the loss and LAE reserves in Exhibit A, items 1 through 6. These reserves include "Retroactive Reinsurance Reserve Assumed," which in the case of Fictitious totaled $0.

Unless otherwise disclosed, the Appointed Actuary will generally opine on the loss and LAE reserves including the amount of retroactive reinsurance assumed, despite the fact that the amount of retroactive reinsurance is not accounted for within lines 1 and 3 of page 3 of the Annual Statement under SAP. This treatment is in accordance with the NAIC instructions.

[106] Ibid., page 10.
[107] Committee on Property and Liability Financial Reporting, American Academy of Actuaries, "Property and Casualty Practice Note, Statements of Actuarial Opinion on P&C Loss Reserves as of December 31, 2018," page 55.
[108] See Appendix I of this publication for the Statement of Actuarial Opinion for Fictitious Insurance Company.

Retroactive reinsurance assumed is a liability, and regulators look for assurance that this balance is reasonable.

The reserves for retroactive reinsurance ceded are not separately listed on Exhibit A and are therefore not explicitly opined on by the actuary. The absence of this reserve from Exhibit A is not because regulators don't care about the reasonableness of the balance. Rather, the reserve for retroactive reinsurance ceded is already included as a component of the gross loss and LAE reserves, which are opined on by the actuary.[109] An overstatement or understatement of retroactive reinsurance ceded would impact gross and ceded reserves equally and have no impact on the net reserve balance.

RELEVANT COMMENTS

The relevant comments section provides commentary and disclosures relative to the reserves opined on to assist the reader in understanding the context and composition of those reserves. Commentary is required on the following items:

- The actuary's materiality standard for purposes of addressing the risk of material adverse deviation
- Significant risks and uncertainties that could result in material adverse deviation
- The significance of items listed in Exhibit B, including:
    - Anticipated net salvage and subrogation
    - Nontabular discounting
    - Tabular discounting
    - Net reserves for the company's share of voluntary and involuntary pools and associations
    - Net reserves for asbestos and environmental liabilities
    - Claims-made extended loss and LAE reserve reported as unearned premium and as loss reserves
- Retroactive or financial reinsurance
- Uncollectible reinsurance
- The results of IRIS ratios 11, 12 and 13 and explanation for exceptional values
- Changes in methods and assumptions from those employed in the most recent prior opinion that are deemed to have a material effect on the recorded reserve or actuary's unpaid claim estimate
- Unearned premium reserves for P&C Long Duration Contracts
- Net reserves for Accident and Health ("A&H") Long Duration Contracts that the company carries on the Liabilities, Surplus and Other Funds page as Losses, Loss

[109] Recall from Chapter 10. Notes to Financial Statements, a company's gross reserves are not reduced for retroactive reinsurance ceded. Rather, retroactive reinsurance ceded is recorded separately as a write-in item on the balance sheet.

Adjustment Expenses, Unearned Premium or other Write-In items (e.g., Premium Deficiency Reserves, Contract Reserves, or AG 51 Reserves)[110]

With respect to the risk of material adverse deviation, the NAIC Instructions require the appointed actuary to make an explicit statement as to whether or not he/she believes there are significant risks and/or uncertainties that could result in material adverse deviation.

Smith addresses the above items within the 2018 SAO for Fictitious, as applicable. We will not discuss each item but rather provide further details on some to assist in reading this section of the opinion.

MATERIALITY STANDARD

There are numerous ways an actuary can establish his or her materiality standards, and examples are provided in the COPLFR Practice Note. Common methods are based on a percentage of reserves, surplus and movements in Risk-Based Capital (RBC) levels, among others. Materiality standards such as 10% of loss and LAE reserves or anywhere from 10% to 20% of surplus are commonly used. However, some actuaries establish materiality standards using a set dollar amount based on the actuary's particular knowledge of the company's operations. As an extreme example, for a company operating with limited surplus and/or under regulatory intervention, a deviation in loss and LAE reserves greater than $0 might be considered material.

Regardless, there is no "one size fits all" in terms of formulaic materiality standards. The standard is based on the actuary's personal opinion as to what he or she considers material in relation to the company's reserves and surplus.

Smith considered a deviation in net loss and LAE reserves of more than:

1. 10% of net loss and LAE reserves, which he calculated as:

   10% of $51.557 million = $5.156 million

2. 20% of policyholders' surplus, which he calculated as:

[110] "A&H Long Duration Contracts are defined on page 10 of the NAIC SAO Instructions as "contracts in which the contract term is greater than or equal to 13 months and contract reserves are required. See Schedule H instructions for a description of categories of contract reserves, as well as policy features that give rise to contract reserves. Two specific examples of contracts that typically require contract reserves are long-term care and disability income insurance." According to page 15 of the NAIC SAO Instructions, "Actuarial Guideline LI—The Application of Asset Adequacy Testing to Long-Term Care Insurance Reserves (AG 51) in the NAIC Accounting Practices and Procedures Manual requires a company to perform a stand-alone asset adequacy analysis for its in force long-term care (LTC) contracts with more than 10,000 in force lives as of the valuation date. The Actuarial Report and workpapers summarizing the results, assumptions and testing procedures for the asset adequacy testing of LTC business must be in compliance with AG 51 requirements."

20% of $31.024 million = $6.205 million

Or

3. The reduction in surplus that would result in additional action per the NAIC RBC formula, which he calculated as the difference between the following:

    - The company's total adjusted capital of $31.024 million,[111] which produces an RBC ratio of 555% based on authorized control level (ACL) RBC of $5.588 million per the Five-Year Historical Data exhibit
    - Adjusted capital at the next RBC level of $11.176 million, which is equal to two times ACL

    The difference between $31.024 million and $11.176 million is $19.848 million.

For purposes of establishing his materiality standard, Smith selects the smallest of the three balances, which in this case happens to be 10% of net loss and LAE reserves ($5.156 million).

MAJOR RISK FACTORS

Once materiality is defined, the actuary determines whether there are significant risks or uncertainties that could result in material adverse deviation in the company's loss and LAE reserve. According to the NAIC instructions to the SAO, "If such risk exists, the actuary should include an explanatory paragraph to describe the major factors, combination of factors, or particular conditions underlying the risks and uncertainties that the actuary reasonably believes could result in material adverse deviation."[112] Examples of risk factors are provided in the COPLFR Practice Note.

Note that the actuary is not expected to list all risks that the company is exposed. Rather, only those major risk factors that could result in the reserves developing adversely by an amount that is material relative to the actuary's materiality standard. To illustrate, Smith identifies and provides details about major risk factors that materially affect the variability of the reserves held by Fictitious Insurance Company. The major risk factors identified are mass tort claims; so-called "Chinese drywall" claims; cumulative injury losses; claims from large deductible workers' compensation policies; and claims related to catastrophic weather events, including wildfires, tornadoes and hurricanes. The uncertainty associated with these types of claims adds to the variability in the company's recorded reserves.

[111] Differences from above due to immaterial rounding errors that may occur in the Annual Statement.
[112] 2018 NAIC Annual Statement Instructions Property/Casualty, page 13.

RISK OF MATERIAL ADVERSE DEVIATION

The actuary is required to make a clear statement within the SAO as to whether or not there are significant risks or uncertainties that could result in material adverse deviation. That determination is based on the major risk factors identified by the actuary, the actuary's professional opinion of the variability inherent in the unpaid claim estimates and the actuary's materiality standard.

In the case of Fictitious, Smith concludes that there are significant risks that could result in the net reserve amount deviating adversely from that recorded by the company by a material amount. This conclusion was determined in part quantitatively, by comparing the distance between the company's net recorded loss and LAE reserve and the high end of Smith's range to his materiality standard.

As shown in the Smith's Actuarial Opinion Summary for the company, he has developed a range of reasonable unpaid loss and LAE claim estimates on a net of reinsurance basis of $43 million to $57 million with a point estimate of $50 million. The distance between the company's recorded reserve of $51.556 million and the high end of Smith's range is $5.443 million. Smith's materiality standard is $5.156 million, which is less than the distance between the high end of his range and the recorded reserve. This means that a deviation of $5.156 million is reasonably expected by Smith, as it lies within his range relative to the recorded balance. The compilation of these figures is shown in Table 57.

TABLE 57

	WS Actuarial Consulting				
				Fictitious	Carried + Materiality
	Low	Point	High	Carried	Standard
Reserve estimates	43,000	50,000	57,000	51,557	56,713

Stated differently, Smith reasonably expects that the company's carried reserve could deviate by an amount equal to the materiality standard since the carried reserve plus the materiality standard lies within his range of reasonable unpaid claim estimates. The results of his quantitative analysis, coupled with his knowledge of the significant risks and uncertainties inherent in the company's reserves, lead Smith to conclude that there are significant risks and uncertainties that could result in material adverse deviation in the recorded reserves.

It is important to note that there is no requirement for an actuary to provide a range. Even when a range is provided, the actuary may believe there are significant risks and uncertainties that could result in material adverse deviation despite the results of the calculation described above. In other words, there may be qualitative reasons for concluding there are significant risks that could result in material adverse deviation absent quantitative reasons. For example, a company might have a significant portion of its gross loss and LAE reserves ceded

to a reinsurer of relatively weak financial strength. In this case, the carried net reserve plus materiality standard might exceed the high end of the actuary's range (assuming all reinsurance was considered valid and collectible in determining the range). However, the risk that the company may not be able to recover a portion of its gross reserves due to the financial strength of one of its reinsurers may be considered significant by the actuary, and lead him/her to conclude the carried net reserves could deviate adversely by a material amount. Therefore, both qualitative and quantitative considerations should be considered in determining whether there are significant risks that could result in material adverse deviation.

REMAINING RELEVANT COMMENTS

The remaining relevant comments in Smith's opinion speak to the disclosure items in Exhibit B, addressing the fact that the company anticipates salvage and subrogation in its reserves totaling $1.363 million and discounts its reserves for certain workers' compensation and other liability claims on a tabular basis, the amount of which totals $1.365 million.

According to Smith, the company does not have claims-made extended reporting endorsement loss and expense reserves, participate in any underwriting pools or associations or write either P&C or A&H Long Duration Contracts.

As noted, retroactive and financial reinsurance is addressed in the relevant comments section. The liability for the one retroactive reinsurance assumed contract that the company has been deemed immaterial by Smith.

Finally, Smith has disclosed in his opinion that IRIS ratios 11, 12 and 13 did not produce unusual values for the company. We have confirmed this statement in our recalculation of Fictitious' IRIS ratios in Appendix I of this publication.

SIGNATURE OF THE APPOINTED ACTUARY

The SAO closes with an affirmative statement that an actuarial report supporting the SAO will be provided to the company and retained for a period of seven years at its administrative offices and will be made available for regulatory examination, if requested.

The SAO is signed and dated by the actuary for delivery along with the Annual Statement by March 1 of the year following the Annual Statement date (December 31). Note that some states require an original signature on each signed opinion, as opposed to a photocopy. The signature line includes the actuary's address (both postal and email).

Smith signed the opinion on February 24, 2019.

NOTEWORTHY CHANGES TO THE NAIC SAO INSTRUCTIONS IN 2019

While this text contemplates the NAIC SAO Instructions for 2018, there were significant changes to the NAIC SAO Instructions for 2019 pertaining to the requirements for an actuary

to be qualified to sign property/casualty SAOs. In particular, the NAIC set the definition of a "Qualified Actuary" as "a person who:

(i) Meets the basic education, experience and continuing education requirements of Specific Qualifications Standard for Statements of Actuarial Opinion, NAIC Property and Casualty Annual Statement, as set forth in the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States (U.S. Qualification Standards), promulgated by the American Academy of Actuaries (Academy), and
(ii) has obtained and maintains an Accepted Actuarial Designation; and
(iii) is a member of a professional actuarial association that requires adherence to the same Code of Professional Conduct promulgated by the Academy, requires adherence to the U.S. Qualification Standards, and participates in the Actuarial Board for Counseling and Discipline when its members are practicing in the U.S.

An exception to parts (i) and (ii) of this definition would be an actuary evaluated by the Academy's Casualty Practice Council and determined to be a Qualified Actuary for particular lines of business and business activities."[113]

The NAIC has defined the term "Accepted Actuarial Designation as "an actuarial designation accepted as meeting or exceeding the NAIC's Minimum Property/Casualty (P/C) Actuarial Educational Standards for a P/C Appointed Actuary (published on the NAIC website). The following actuarial designations, with any noted conditions, are accepted as meeting or exceeding basic education minimum standards:

(i) Fellow of the CAS (FCAS) – Condition: basic education must include Exam 6 – Regulation and Financial Reporting (United States);
(ii) Associate of the CAS (ACAS) – Conditions: basic education must include Exam 6 – Regulation and Financial Reporting (United States) and Exam 7 – Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management;
(iii) Fellow of the SOA (FSA) – Conditions: basic education must include completion of the general insurance track, including the following optional exams: the United States' version of the Financial and Regulatory Environment Exam and the Advanced Topics in General Insurance Exam."[114]

The 2019 NAIC SAO Instructions include a table of allowable exam substitutions for (i), (ii) and (iii) in the definition of "Accepted Actuarial Designation" given that exams have changed over time.

[113] 2019 NAIC Annual Statement Instructions Property/Casualty, page 10.
[114] Ibid.

In accordance with these changes, Exhibit B, Item 3 of the SAO (the Appointed Actuary's designation) has been modified to provide the Appointed Actuary's Accepted Actuarial Designation and the NAIC now requires the Appointed Actuary to provide qualification documentation to company's Board of Directors, including a description of how the Appointed Actuary meets the definition of Qualified Actuary and his or her experience relevant to the subject of the SAO.

We refer the reader to the 2019 NAIC SAO Instructions, AOWG Regulatory Guidance and COPLFR Practice Note for further details on these changes and new requirements for the Appointed Actuary.

CHAPTER 17. ACTUARIAL OPINION SUMMARY SUPPLEMENT

OVERVIEW

The Actuarial Opinion Summary Supplement (AOS) is required to be filed by the company with its domiciliary state by March 15 of the year following the Annual Statement date (December 31). This is a confidential document containing the appointed actuary's range of unpaid claim estimates and/or point estimate, as calculated by the actuary, in comparison to the company's recorded reserves on a net and gross of reinsurance basis. Due to its confidential nature, it is filed separately from the public Annual Statement document, which is due on March 1.

Non-domiciliary states that provide evidence of the ability to preserve the confidential nature of the document may request a copy.

The AOS also provides a statement regarding whether the company has experienced one-year adverse development in excess of 5% of surplus in three or more of the past five years. The amount of adverse development is computed in Schedule P, Part 2, Summary, and is also provided in the one-year development line of the Five-Year Historical Data exhibit within the Annual Statement. If the company has experienced adverse development in excess of 5% of surplus in three or more of the past five years, an explanatory paragraph is required so that the regulator can determine what additional review, if any, is required.

Prior to 2011, the actuary had the choice of providing his or her range, point estimate, or both, regardless of whether the actuary calculated both. In 2011, the instructions changed, requiring the actuary to include the point estimate and range, if both are calculated. If only one is calculated, the actuary would need only to provide one.

Because the AOS document is confidential, it is not available for public review, unlike the Statement of Actuarial Opinion (SAO). As a result, the student will not be able to find the AOS for the companies listed on the Casualty Actuarial Society Syllabus of Basic Education. However, we created an AOS for Fictitious Insurance Company, which is provided in Appendix I of this publication and should be read side by side with this chapter of the publication.

Like the SAO, the AOS is signed and dated by the actuary. In the case of Fictitious, this is Mr. William H. Smith. As we see in items A and B, Smith has produced a range and point estimate in his independent analysis of unpaid claims supporting the SAO. Items A and B include his range and point estimate on a net and gross of reinsurance basis, as displayed in Table 58.

TABLE 58

	Net Reserves (USD in 000s)			Gross Reserves (USD in 000s)		
	Low	Point	High	Low	Point	High
A. Actuary's range of reserve estimates	43,000		57,000	52,000		68,000
B. Actuary's point estimate		50,000			60,000	

Item C provides the company's carried loss and loss adjustment expense (LAE) reserves on which the actuary has based his opinion. Item D highlights the company's position within the actuary's range by showing the difference between the carried loss and LAE reserves and the actuary's range and point estimate. In Table 59 we see that Fictitious' recorded reserves lie above Smith's point estimate.

TABLE 59

	Net Reserves (USD in 000s)			Gross Reserves (USD in 000s)		
	Low	Point	High	Low	Point	High
C. Company carried reserves		51,557			61,699	
D. Difference between Company carried and Actuary's estimate (C. - A. and C. – B., if applicable)	8,557	1,557	(5,443)	9,699	1,699	(6,301)

It is not surprising that Fictitious' recorded reserves lie within the high end of the actuary's range given that the Fictitious' recorded loss and LAE reserves have developed favorably over time. This favorable development is seen in the one-year development line of the Five-Year Historical Data exhibit within Fictitious' 2018 Annual Statement. At the risk of being repetitious (see Table 13), we show the one-year development line again in Table 60.

TABLE 60

Data from Fictitious Insurance Company 2018 Five-Year Historical Data					
	2018	2017	2016	2015	2014
73. Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2 – Summary, Line 12, Column 11); USD in 000s	(875)	(1,354)	(1,618)	(1,935)	(1,918)
74. Percent of development of losses and loss expenses incurred to policyholders' surplus of prior year end (Line 73 divided by Page 4, Line 21, Column 1 x 100)	(2.8)	(3.8)	(5.0)	(5.6)	(2.6)

While the AOS only displays the company's current position within the actuary's range, the AOS Instructions require that the actuary state whether the company has experienced one-

year adverse development in excess of 5% of surplus in three or more of the past five years. This and an explanation are provided in Item E of the AOS. The information contained in Item E enables the regulator to obtain an understanding of why the company's recorded reserves continue to show adverse development over time. The concern, of course, is whether the company is consistently understating reserves and therefore overstating surplus. Depending on the result, the information provided in Item E could trigger additional regulatory review in assessing the company's financial health. As shown in Table 60, Fictitious' loss and LAE reserves have developed favorably in each of the past five years. As a result, Smith has responded with the following in Item E of his AOS:

> E. The Company has not had 1-year adverse development in excess of 5% of surplus in at least three of the last five calendar years, as measured by Schedule P, Part 2 Summary, and disclosed in the Five-Year Historical Data, on line 74, of the Company's December 31, 2018 statutory-basis Annual Statement.

In those cases where there has been adverse development in excess of 5% of surplus in three or more of the last five years, we have seen explanations in Item E vary from providing vague detail to very specific reasons for the changes. The more detail that can be provided as to the root cause, the easier time the regulator will have in his or her review.

To illustrate we have provided sample wording in the 2018 AOS of a fictional company that experienced one-year development in excess of 5% of surplus during 2015 through 2017:

> The company had one-year adverse development in excess of 5% of statutory surplus in three of the past five years. The exceptional values occurred in years 2015 through 2017. The exceptional values resulted from a strengthening in loss reserves made by management to reflect unexpected trends in asbestos and environmental claims on excess liability policies written by the company from 1968 to 1986.
>
> These trends include increased likelihood of exposure to higher-layer policies as a result of greater than expected emergence of reported claims on underlying policies, and efforts by insureds to expand coverage periods and expose additional policies.
>
> It should be noted that in 2018 the company entered into a retroactive reinsurance agreement whereby 100% of this run-off business is ceded to an unaffiliated reinsurance company. Going forward, this reinsurance agreement will mitigate the impact of adverse development of loss reserves on the company's statutory surplus.

The regulator reading the above will determine whether additional steps are necessary to understand the cause of the adverse development and impact on the company's financial health. While the regulator may gain comfort that the company's balance sheet is protected against future adverse development because of the new reinsurance agreement, we expect that the regulator would want to understand the potential impact of such development on the financial health of the company's unaffiliated reinsurer.

CHAPTER 18. INSURANCE EXPENSE EXHIBIT

OVERVIEW

As discussed in Chapter 4. Primary Financial Statements, the Statement of Income within the Annual Statement provides a view of an insurance company's profitability over the past year on a net of reinsurance basis, but only on an aggregate level for all lines of business combined. The Insurance Expense Exhibit (IEE) enables a deeper review of an insurance company's profitability by showing the components of statutory profit (loss) by line of business on a direct and net of reinsurance basis.

The IEE is required to be filed by April 1 of the year following the Annual Statement date (December 31). It contains three parts plus interrogatories. Part I provides an allocation of the other underwriting expense category within Part 3, Expenses, of the Underwriting and Investment Exhibit (U&IE) of the Annual Statement. Parts II and III allocate pretax profit by line of business, on a net and direct written basis, respectively. All dollars are shown in thousands within the IEE, either by rounding or truncating.

The uses of the IEE are numerous. The following provides some examples:

- Regulators use the IEE as a means for monitoring financial health. Changes or historical trends in an insurance company's profitability at the line of business level may put a strain on the company's surplus in total, thereby threatening solvency.
- Regulators also use the IEE as a means to monitor rate adequacy. Inadequate rates also threaten an insurance company's financial health. Conversely, excessive rates are also a concern to the regulator as they are unfair to the consumer.
- Stakeholders in general use the IEE as a means to identify those lines of business that have performed profitably and those that have not in order to make informed business decisions, such as where to deploy capital and/or where the company should grow.
- An investor might look at the IEE in light of the company's future growth plans to make decisions as to how much to invest in the company. Growth into unprofitable lines might lead the investor to reduce his or her level of investment in the company.
- Actuaries use the IEE as a publicly available source of premium, loss and expense data for benchmarking company performance by line of business.

As we shall see, there are cautions to using the IEE as described above, and we have presented several within this chapter.

Throughout our discussion of the IEE, we will continue to use Fictitious Insurance Company in our examples.

PART I – ALLOCATION TO EXPENSE GROUPS

The National Association of Insurance Commissioners (NAIC) instructions to the Property/Casualty Annual Statement provide directions for classifying expenses to the 22 operating expense categories provided in Part 3, Expenses, of the U&IE within the Annual Statement. The instructions provide uniformity in classification of expenses among property/casualty insurance companies.

The 22 operating expense categories are as follows, by line number per the U&IE, Part 3, Expenses:

1. Claims adjustment services
2. Commission and brokerage
3. Allowances to managers and agents
4. Advertising
5. Boards, bureaus and associations
6. Surveys and underwriting reports
7. Audit of assureds' records
8. Salary and related items
9. Employee relations and welfare
10. Insurance
11. Directors' fees
12. Travel and travel items
13. Rent and rent items
14. Equipment
15. Cost or depreciation of Electronic Data Processing (EDP) equipment and software
16. Printing and stationery
17. Postage, telephone and telegraph, exchange and expenses
18. Legal and auditing
20. Taxes, licenses and fees
21. Real estate expenses
22. Real estate taxes
24. Miscellaneous

Amounts for the above operating expenses are each allocated into the following three categories (column headings) within the U&IE:

1. Loss Adjustment Expenses
2. Other Underwriting Expenses
3. Investment Expenses

Part 1 of the IEE further allocates other underwriting expenses into the following three components (column headings):

1. Acquisition, Field Supervision and Collection Expenses
2. General Expenses
3. Taxes, Licenses and Fees

The allocation of other underwriting expenses from the U&IE, Part 3, Expenses, into Part I of the IEE is as follows:

- All commission and brokerage expenses from line 2 of U&IE, Part 3 should be allocated to acquisition, field supervision and collection expenses in column 2 of Part I of the IEE.
- All taxes, licenses and fees from line 20 of U&IE, Part 3 should be allocated to taxes, licenses and fees in column 4 of Part I of the IEE.
- The remaining operating expenses from lines 3 through 18 of the IEE can be allocated to acquisition, field supervision and collection expenses in column 2 or general expenses in column 3 of Part I of the IEE, as applicable.

Part 1 of the IEE looks like Part 3, Expenses, of the U&IE within the Annual Statement, except:

1. There are three columns under the other underwriting expenses heading, rather than one in total.
2. The operating expense classification line items end with line 25, total expenses incurred, and therefore do not include amounts unpaid, amounts relating to uninsured plans or total expenses paid (lines 26 through 30 of U&IE, Part 3).
3. Amounts are reported in thousands of dollars in the IEE rather than in whole dollars as in the U&IE.

The totals in column 4 of the U&IE, Part 3, line 25 should equal the totals in column 6 of Part I of the IEE multiplied by 1,000.

Table 61 provides the other underwriting expenses column from Part3, Expenses, of the U&IE from Fictitious' 2018 Annual Statement, with the allocation to acquisition, field supervision and collection expenses, general expenses, and taxes licenses and fees, as in Part I of the company's 2018 IEE.

TABLE 61

	Annual Statement	Insurance Expense Exhibit		
	Underwriting and Investment Exhibit	Other Underwriting Expenses (USD in 000s)		
	Part 3 - Expenses	Part 1 - Allocation to Expense Groups		
	Column 2	Column 2	Column 3	Column 4
Operating Expense Classifications	Other Underwriting Expenses	Acquisition, Field Supervision and Collection Expenses	General Expenses	Taxes, Licenses and Fees
2. Commission and brokerage				
2.1 Direct excluding contingent	4,759,000	4,759		
2.2 Reinsurance assumed, excluding contingent	–	–		
2.3 Reinsurance ceded, excluding contingent	816,000	816		
2.4 Contingent - direct	121,000	121		
2.5 Contingent - reinsurance assumed	–	–		
2.6 Contingent - reinsurance ceded	9,000	9		
2.7 Policy and membership fees	–	–		
2.8 Net commission and brokerage (2.1 + 2.2 - 2.3 + 2.4 + 2.5 - 2.6 + 2.7)	4,055,000	4,055	–	–
3. Allowances to manager and agents	4,000	1	3	
4. Advertising	208,000	75	133	
5. Boards, bureaus and associations	106,000	38	68	
6. Surveys and underwriting reports	99,000	36	63	
7. Audit of assureds' records	–	–	–	
8. Salary and related items:		–	–	
8.1 Salaries	1,845,000	664	1,181	
8.2 Payroll taxes	115,000	41	74	
9. Employee relations and welfare	293,000	105	188	
10. Insurance	23,000	8	15	
11. Directors' fees	–	–	–	
12. Travel and travel items	95,000	34	61	
13. Rent and rent items	133,000	48	85	
14. Equipment	42,000	15	27	
15. Cost or depreciation of EDP equipment and software	330,000	119	211	
16. Printing and stationery	19,000	7	12	
17. Postage, telephone and telegraph, exchange and express	112,000	40	72	
18. Legal and auditing	14,000	5	9	
19. Totals (Lines 3 to 18)	3,438,000	1,236	2,202	–
20. Taxes, licenses and fees:				
20.1 State and local insurance taxes deducting guaranty association credits of $1,103	791,000			791
20.2 Insurance department licenses and fees	53,000			53
20.3 Gross guaranty association assessments	(2,000)			(2)
20.4 All other (excluding federal and foreign income and real estate)	18,000			18
20.5 Total taxes, licenses and fees (20.1 + 20.2 + 20.3 + 20.4)	860,000	–	–	860
21. Real estate expenses	–			
22. Real estate taxes	–			
23. Reimbursements by uninsured plans	–			
24. Aggregate write-ins for miscellaneous expenses	130,000	47	83	
25. Total expenses incurred	8,483,000	5,338	2,285	860

PART II – ALLOCATION TO LINES OF BUSINESS NET OF REINSURANCE

Part II provides the components of total profit (loss) on a pretax basis, net of reinsurance, and additional information needed to calculate net profit (loss) for the line of business segments used in the U&IE of the Annual Statement. The line of business segments differ slightly from the U&IE in the following ways:

- Allied lines are broken down into further components in the IEE as:
    - 2.1 Allied lines
    - 2.2 Multiple peril crop
    - 2.3 Federal flood
- Commercial multiple peril is broken down into further components in the IEE as:
    - 5.1 Commercial multiple peril (non-liability portion)
    - 5.2 Commercial multiple peril (liability portion)
- Medical professional liability occurrence and claims-made lines are combined in the IEE into line 11, as are the corresponding product liability lines into line 18.
- Auto physical damage is broken down into further segments in the IEE as:
    - 21.1 Private passenger auto physical damage
    - 21.2 Commercial auto physical damage
- Reinsurance lines 31 through 33 are summed in the IEE.

Line 35 of the IEE provides the totals for all lines of business in lines 1 through 34.

Similar to the U&IE, the line of business segments are displayed in the first column of the IEE, with the components of profit (loss) and additional items in the remaining columns, providing the amounts (or percentages) for each line of business. These components and additional items are as follows:

- Net premiums written
- Net premiums earned
- Dividends to policyholders
- Incurred:
    - Loss
    - Defense and cost containment (DCC)
    - Adjusting and other (A&O) expenses
- Unpaid:
    - Loss
    - DCC
    - A&O expenses

- Unearned premium reserves
- Agents' balances
- Other underwriting expenses:
  - Commission and brokerage expenses incurred
  - Taxes, licenses and fees incurred
  - Other acquisitions, field supervision and collection expenses incurred
  - General expenses incurred
- Other income less other expenses
- Pre-tax profit or loss excluding all investment gain
- Investment gain on funds attributable to insurance transactions
- Profit or loss excluding investment gain attributable to capital and surplus
- Investment gain attributable to capital and surplus

The above items are organized in two columns: the first containing the dollar amount and the second providing the ratio of the dollar amount to premiums earned. There are 42 columns: 21 provide dollar amounts (odd-numbered columns) and 21 provide percentages to earned premium (even-numbered columns).

Total profit (loss) is calculated using the same components as in the Statement of Income, with the exception that the IEE is on a pretax basis. Most of the aforementioned components used to compute pretax profit (loss) either reconcile directly to exhibits within the Annual Statement, or are reasonably straightforward for companies to compute.[115] However, the calculation of investment gain is not straightforward, as the allocation of investment gain by line of business is not intuitive.

We will discuss the computation of each component (odd-numbered columns), reconciling to Annual Statement exhibits, and provide example(s) as to how to calculate investment gain. We will not address the even-numbered columns, other than to say that they represent the ratio of the dollar amount to net earned premium, on a line-by-line basis.

There are numerous ways to estimate profit by line of business; the approach used by the NAIC for the IEE is only one of them. The NAIC approach is a retrospective one. It allocates total profit that has emerged rather than providing an estimate of future profit, as is used in pricing insurance policies.

Further, the allocation of surplus by line of business does not consider how much surplus is needed to support the line, as is the intention in pricing insurance policies and capital

[115] According to page 419 of the 2018 NAIC Annual Statement Instructions Property/Casualty, "In instances where the reporting entity cannot allocate amounts to lines of business by direct and accurate allocation, the methods of allocation stated in the Uniform Classification of Expenses found in the Appendix of the NAIC Annual Statement Instructions must be used. Where the instructions do not define means of allocation, a reasonable method of allocation must be applied and disclosed in Interrogatory 4."

modeling. Rather, as we shall see, the entire amount of surplus is allocated by line based on the level of the company's reserves (loss and unearned premium) and earned premium, which do not necessarily measure the inherent risk of a particular line of business. Good examples are catastrophe-exposed short-tailed lines, such as homeowners. In non-catastrophe years, the reserves for these lines may be relatively small because claims are reported and paid out relatively quickly when compared to longer-tailed casualty lines. However, as the property/casualty insurance industry observed in 2018, this short-tailed line of business is exposed to considerable risk. We shall see this in our examples for Fictitious. Therefore, caution should be made when reviewing and placing reliance on the results of the IEE calculations of surplus and profit by line of business for pricing or capital allocation purposes.

Columns 1 through 32

The following components or items within Part II reconcile directly to the U&IE within the Annual Statement by line of business as follows:

TABLE 62

IEE Part II		Reconciles to	U&IE		
Column Number	Heading		Part	Heading	Column Number
1	Premiums Written	-------->	1B	Net Premiums Written	6
3	Premiums Earned	-------->	1	Premiums Earned During Year	4
7	Incurred Loss	-------->	2	Losses Incurred Current Year	7
13	Unpaid Losses	-------->	2A	Net Losses Unpaid	8
19	Unearned Premium Reserves	-------->	1A	Total Reserve for Unearned premiums	5

Dividends to policyholders in column 5 reconcile in total to the amount in the Statement of Income of the Annual Statement, line 17. The allocation by line of business is based on the policies eligible and receiving dividends or on a company's formulaic determination if the line of business per the policy does not correspond directly to a line of business in the Annual Statement.[116]

Loss adjustment expense (LAE), provided separately for DCC and A&O expenses incurred and unpaid, in columns 9, 11, 15 and 17 of the IEE, cannot be found within the Annual Statement for the line of business breakdowns required in the IEE. However, insurance companies track expenses by line of business and therefore know which expenses are allocated to which lines. In total, the LAE incurred amounts in columns 9 plus 11 reconcile to the Statement of Income, line 3, column 1 (current year) and Part 3 of the U&IE, line 25, column 1. The LAE unpaid

[116] Feldblum, S., "The Insurance Expense Exhibit and the Allocation of Investment Income" (Fifth Edition), CAS Study Note, May 1997, page 32.

amounts reconcile to page 3 of the Annual Statement, line 3, column 1 (current year) and Part 2A of the U&IE, line 35, column 9.

Like policyholder dividends, insurance companies know which lines agents' balances stem from and therefore can allocate the amounts directly in column 21. The amounts should agree to balances included within lines 15.1 plus 15.2, column 3 of the Assets page of the Annual Statement.

Other underwriting expenses in columns 23, 25, 27 and 29 reconcile directly to Part I of the IEE.

Other income less other expenses in column 31 of the IEE reconciles in total to line 15 minus line 5 of the Statement of Income. Line 15 of the Statement of Income provides total other income incurred, and line 5 provides aggregate write-ins for underwriting deductions. The allocation by line is performed directly by accumulating the sources of other income and underwriting deductions on specific policies and mapping the income/deductions by policy to the Annual Statement lines of business.

Calculation of Pretax Profit or Loss Excluding All Investment Gain (Column 33)

Column 33 provides pretax profit (loss) excluding all investment gains and is calculated from the information contained in the previous columns of Part II of the IEE as follows:

Pretax profit (loss) excluding all investment gains =

Premiums earned (column 3)
- Dividends to policyholders (column 5)
- Incurred loss (column 7)
- DCC expenses incurred (column 9)
- A&O expenses incurred (column 11)
- Commission and brokerage expenses incurred (column 23)
- Taxes, licenses and fees incurred (column 25)
- Other acquisitions, field supervision and collection expenses incurred (column 27)
- General expenses incurred (column 29)
+ Other income less other expenses (column 31).

Simply put, pretax profit equals inflows of earned revenue minus outflows of incurred expenses.

The total amount in column 33 reconciles to line 18 (net income after dividends to policyholders, after capital gains tax and before all other federal and foreign income taxes) minus line 11 (net investment gain (loss)) of the Statement of Income.

Table 63 demonstrates the calculation of column 33 of Part II of the IEE in total and shows the reconciliation to the Statement of Income within the Annual Statement for Fictitious in

2018. Recall that figures in the IEE are provided in thousands; any differences from the Statement of Income are due to rounding errors.

TABLE 63

Data from Fictitious Insurance Company 2018 IEE (USD in 000s) for All Lines of Business			
Column Number	IEE Part II Column Heading	Total Line 35	Statement of Income Reference
3	Premiums Earned	26,512	Line 1
5	Dividends to Policyholders	46	Line 17
7	Incurred Loss	16,907	Line 2
9	Defense and Cost Containment Expenses Incurred	1,671	
11	Adjusting and Other Expenses Incurred	1,585	
	Subtotal Loss Adjustment Expenses Incurred	3,256	Line 3
23	Commissions and Brokerage Expenses Incurred	4,055	
25	Taxes, Licenses and Fees Incurred	860	
27	Other Acquisitions, Field Supervision and Collection Expenses Incurred	1,283	
29	General Expenses Incurred	2,285	
	Subtotal Other Underwriting Expenses Incurred	8,483	Line 4
31	Other Income Less Other Expenses	33	Line 15 minus Line 5
33	Pre-Tax Profit or Loss Excluding All Investment Gain	(2,147)	= Line 1 - Lines 17, 2, 3, 4 + Line 15

As displayed in Table 63, Fictitious operated at a pretax loss (before any gains or losses from investments) of $2.1 million in 2018, most of which was due to underwriting (underwriting loss totaled $2.1 million as per line 8 of the Statement of Income). Net incurred loss and LAE during 2018 was $4.4 million higher than that incurred in 2017, with less than $1 million more in net earned premium. As previously explained, this was due to the high frequency of catastrophe losses incurred by Fictitious in 2018, compared to a relatively benign catastrophe year for Fictitious in 2017.

Of the $2.1 million pretax loss (before investment gain), $1.2 million stems from the homeowners of business. Homeowners is the largest line of business written by the company in terms of net written premium volume ($4.6 million per column 1 of the IEE, Part II). Further, the homeowners line was hit hardest by the catastrophe losses in 2018. Given its significance to the 2018 results, we will use homeowners as the line of business example for computing total profit or loss for Fictitious.

The remaining columns, columns 35 through 41, are determined formulaically and are the crux of Part II of the IEE.

Overview of the Calculation of Total Profit or Loss (Column 41)

Column 41 provides total profit (loss) on a pretax basis to an insurance company for each line of business. It is computed by taking pretax profit (loss) before any investment gain and adding investment gains.

Column 41 of the IEE is equal to net income as calculated in the Statement of Income within the Annual Statement, except all amounts in the IEE are gross of taxes. Column 41 reconciles to line 18 (net income after dividends to policyholders, after capital gains tax and before all other federal and foreign income taxes) plus the amount of capital gains tax provided in line 10 (Net realized capital gains (losses) less capital gains tax) of the Statement of Income. Capital gains taxes are added back to the calculation simply because total profit is shown on a pretax basis.

Table 64 demonstrates the calculation of column 41 of Part II of the IEE in total and shows the reconciliation to the Statement of Income within the Annual Statement for Fictitious in 2018.

TABLE 64

Data from Fictitious Insurance Company 2018 IEE (USD in 000s) for All Lines of Business			
Column Number	IEE Part II Column Heading	Total Line 35	Statement of Income Reference
33	Pre-tax Profit or Loss Excluding All Investment Gain	(2,147)	= Line 1 - Lines 17, 2, 3, 4 + Line 15
35	Investment Gain on Funds Attributable to Insurance Transactions	2,663	
39	Investment Gain Attributable to Capital and Surplus	1,741	
	Subtotal Net Investment Gain (Loss) Before Capital Gains Tax	4,404	Line 11 + Capital Gains Tax of $99 per Line 10
41	Total Profit or Loss	2,257	Line 18 + Capital Gains Tax of $99 per Line 10

As displayed in Table 64, net investment gain (loss) ($4.4 million) more than offset the Fictitious' underwriting loss in 2018.

The same formula is used to calculate total profit or loss (column 41) for each line of business. The tricky part, of course, is how to allocate the net investment gain (loss) by line of business and between funds attributable to insurance transactions versus those attributable to capital and surplus. The following provides an overview of the allocation procedure, with details in the subsequent sections.

The first step of the calculation is to determine the ratio of net investment gain (loss) to total investable assets then apply that ratio to investable assets by line of business. This calculation provides net investment gain (loss) by line. The ratio of net investment gain (loss) to total investable assets is called the net investment gain ratio.

The second step is to apply the net investment gain ratio to funds attributable to insurance transactions by line of business. This calculation provides investment gain on funds attributable to insurance transactions in column 35.

Investment gain attributable to capital and surplus in column 39 is computed as the difference between net investment gain (loss) and investment gain on funds attributable to insurance transactions in column 35. Formulaically, for each line of business,

Investment gain attributable to capital and surplus (column 39) =

Net investment gain (loss)[117]
- Investment gain on funds attributable to insurance transactions (column 35).

As indicated, both of the inputs in the calculation of investment gain attributable to capital and surplus (column 39) are determined by applying the ratio of net investment gain (loss) to total investable assets for all lines of business to the applicable investable funds (either in total or attributable to insurance transactions) associated with the particular line of business.

Net Investment Gain Ratio

The net investment gain ratio is the ratio of net investment gain (loss) to total investable assets. Total investable assets equal the sum of net loss and LAE reserves, net unearned premium reserves, ceded reinsurance payable and policyholders' surplus, minus agents' balances. These amounts are intended to be a proxy for investable assets as they are amounts that are available for investment by the insurance company.[118] Agents' balances are subtracted in the formula because they are not investable assets.

In the calculation of total investable assets, the mean of the aforementioned amounts are used (i.e., average of the prior year and current year) because investment income during the year is earned on reserves and surplus throughout the year, rather than a fixed point in time.

Formulaically, the net investment gain ratio is calculated as follows, for all lines of business in total:

Net investment gain ratio =

$$\frac{\text{Net investment gain (loss)}}{\text{Total investable assets}}$$

where,

Total investable assets =

Mean net loss and LAE reserves
+ Mean net unearned premium reserves
+ Mean ceded reinsurance premiums payable
+ Mean policyholders' surplus
- Mean agents' balances.

[117] The calculation of net investment gain (loss) is provided in subsequent paragraphs below.

[118] Going back to basics, admitted assets minus liabilities equals surplus. Or equivalently, admitted assets equals liabilities plus surplus. Reserves and ceded reinsurance payables are liabilities that the insurance carrier must hold. As with surplus, the company can invest the assets backing these liabilities. They are therefore used in the calculation to represent investable assets.

Table 65 demonstrates the calculation of the net investment gain ratio based on 2018 Annual Statement data for Fictitious.

TABLE 65

Data from Fictitious Insurance Company 2018 IEE and Annual Statement (USD in 000s)						
All Lines of Business		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement
(1)	Net Investment Gain Ratio	5.0%				= (2) current year divided by (3) mean
(2)	Net Investment Gain (loss) before Capital Gains Tax	4,404				Statement of Income Page 4, Line 11 plus Capital Gains Tax of $99 per Line 10
(3)	Investable Assets	87,540	87,080	87,310		= (4) + (5) + (6) + (7) + (8) - (9)
(4)	Net Loss Reserve	41,894	40,933	41,414	Column (13)	U&IE, Part 2A, Total line, Column 8, divided by 1,000
(5)	Net Loss Adjustment Expense Reserve	9,663	9,664	9,664	Column (15) + (17)	U&IE, Part 2A, Total line, Column 9, divided by 1,000
(6)	Net Unearned Premium Reserve	11,691	11,451	11,571	Column (19)	U&IE, Part 1A, Total line 35, Column 4, divided by 1,000
(7)	Policyholders' Surplus	31,024	31,608	31,316		Liabilities, Surplus and Other Funds, Page 3, Line 37, divided by 1,000
(8)	Ceded Reinsurance Premiums Payable	440	608	524		Liabilities, Surplus and Other Funds, Page 3, Line 12, divided by 1,000
(9)	Agents' Balances	7,172	7,184	7,178	Column (21)	Equals the portion of Assets Line 15.1 plus 15.2, divided by 1,000, for Agents' Balances

As displayed above, the 2018 investment gain ratio for Fictitious was 5%. This means the company earned 5% on its "investable assets" during 2018.

Net Investment Gain (Loss) by Line of Business

Net investment gain (loss) by line of business is determined as the investment gain ratio multiplied by total investable assets for that line of business.

Net investment gain (loss) for a particular line of business =

Net investment gain ratio (for all lines)
* Total investable assets for the line of business

where,

Total investable assets for the line of business =

Mean net loss and LAE reserves for the line of business
\+ Mean net unearned premium reserves for the line of business
\+ Mean ceded reinsurance premiums payable for the line of business
\+ Mean policyholders' surplus for the line of business
\- Mean agents' balances for the line of business.

Table 66 demonstrates the calculation of the net investment gain for the homeowners line of business based on 2018 Annual Statement and IEE data for Fictitious.

TABLE 66

Data from Fictitious Insurance Company 2018 IEE and Annual Statement
(USD in 000s)

Line of Business: Homeowners Multiple Peril	2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement (AS)
(1) Investment Gain for Line of Business	232			Column (35)	= (3) Current Year * (3) Mean
(2) Net Investment Gain Ratio (all lines of business)	5.0%				Calculated in Table 65
(3) Investable Funds for Line of Business			4,603		= (4) + (5) + (6) + (7) - (8) + (9)
(4) Net Loss Reserve for Line of Business	1,311	1,161	1,236	Column (13)	U&IE, Part 2, Line 4, Columns 5 and 6, divided by 1,000
(5) Net Loss Adjustment Expense Reserve for Line of Business	144	170	157	Column (15) + (17)	U&IE, Part 2A, Line 4, Column 9, divided by 1,000; and prior year AS
(6) Net Unearned Premium Reserve for Line of Business	2,401	2,290	2,346	Column (19)	U&IE, Part 1A, Line 4, Column 5, divided by 1,000; and prior year AS
(7) Ceded Reinsurance Premiums Payable for Line of Business	21	3	12		Calculated in Table 67
(8) Agents' Balances for Line of Business	1,901	2,134	2,018	Column (21)	IEE, Column 21, line 4 provided in each of the 2018 and 2017 AS
(9) Surplus Allocable to Line of Business			2,869		Calculated in Table 69

As displayed in Table 66, $232,000 of the company's total $4.4 million in net investment gain during 2018 was allocated to the homeowners line using the NAIC's approach.

The net loss and LAE reserves, unearned premium reserves and agents' balances by line of business used in the above calculation come from columns 13, 15, 17, 19 and 21 of the IEE,

current year and prior year, respectively. Ceded reinsurance premiums payable by line and policyholders' surplus by line, are calculated separately.

Ceded Reinsurance Premiums Payable by Line of Business

Ceded reinsurance premiums payable are allocated to line of business based on the distribution of ceded written premiums by line. Formulaically, the calculation is as follows:

Ceded reinsurance premiums payable for the line of business =

Ceded written premiums for the line of business * Total ceded reinsurance premiums payable.
Total ceded written premiums

Table 67 demonstrates the calculation of Fictitious' ceded reinsurance premiums payable for homeowners.

TABLE 67

Data from Fictitious Insurance Company 2017 and 2018 Annual Statement (USD in 000s)

Line of Business: Homeowners Multiple Peril	2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement (AS)
(1) Ceded Reinsurance Premiums Payable for Line of Business	21	3	12	N/A	= (4) * (5)
(2) Ceded Premiums Written for Line of Business	91	12		N/A	U&IE, Part 1B, Line 4, Columns 4 + 5, divided by 1,000; and prior year AS
(3) Ceded Premiums Written, Total	1,882	2,149		N/A	U&IE, Part 1B, Totals, Columns 4 + 5, divided by 1,000; and prior year AS
(4) Ratio of Ceded Premiums Written for Line of Business to Total	4.8%	0.6%		N/A	= (2) / (3)
(5) Ceded Reinsurance Premiums Payable, Total	440	608		N/A	Liabilities, Surplus and Other Funds, Page 3, Line 12, divided by 1,000

The mean ceded reinsurance payable for homeowners that was used in the calculation of Fictitious' total investable assets for homeowners was $12 (dollars in thousands).

Policyholders' Surplus by Line of Business

The NAIC allocates surplus to line of business in proportion to the sum of net loss and LAE reserves, net unearned premium reserves and net earned premium. The mean values are used in the calculation of the balance sheet figures (reserves), while the current-year value is used for the income statement figure (net earned premium).

The first step in the calculation is to compute the ratio of mean policyholders' surplus to the sum of mean net loss and LAE reserves, mean net unearned premium reserves and current year net earned premiums, in total for all lines combined. This ratio is called the surplus ratio.

Surplus ratio =

Mean policyholders' surplus in total divided by
[Mean net loss and LAE reserves in total
+ Mean net unearned premium reserves in total
+ Current year net earned premium in total].

Table 68 demonstrates the calculation of the 2018 surplus ratio for Fictitious.

TABLE 68

Data from Fictitious Insurance Company 2018 IEE and 2017 and 2018 Annual Statement (USD in 000s)

All Lines of Business		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement (AS)
(1)	Surplus Ratio	35.1%				= (2) / [Sum of means of (3) through (5) plus (6) for current year]
(2)	Policyholders' Surplus	31,024	31,608	31,316		Liabilities, Surplus and Other Funds, Page 3, Line 37, Columns 1 and 2, respectively, divided by 1,000
(3)	Net Loss Reserve	41,894	40,933	41,414	Column (13)	U&IE, Part 2A, Total line, Column 8, divided by 1,000; and prior year AS
(4)	Net Loss Adjustment Expense Reserve	9,663	9,664	9,664	Column (15) + (17)	U&IE, Part 2A, Total line, Column 9, divided by 1,000; and prior year AS
(5)	Net Unearned Premium Reserve	11,691	11,451	11,571	Column (19)	U&IE, Part 1A, Total line 35, Column 4, divided by 1,000; and prior year AS
(6)	Net Earned Premium	26,512			Column (3)	U&IE, Part 1, Total line 35, Column 4, divided by 1,000

The surplus ratio for Fictitious was 35.1% in 2018.

The surplus ratio is then applied to the applicable mean balance sheet amounts and the income statement amount (earned premium) for the current year for the particular line of business to determine the amount of surplus allocated to that line.

Surplus allocated to line of business =

Mean surplus ratio (for all lines) multiplied by
[Mean net loss and LAE reserves for the line of business
+ Mean net unearned premium reserves for the line of business
+ Current year net earned premium for the line of business].

Table 69 shows the application of the surplus ratio in determining the amount of surplus allocated to Fictitious' homeowners line of business.

TABLE 69

Data from Fictitious Insurance Company 2018 IEE and 2017 and 2018 Annual Statement (USD in 000s)

Line of Business: Homeowners Multiple Peril		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement (AS)
(1)	Surplus Allocable to Line of Business			2,872		= (2) * [Sum of means of (3) through (5) plus (6) for current year]
(2)	Surplus Ratio	35.1%				Calculated in Table 68
(3)	Net Loss Reserve for Line of Business	1,311	1,161	1,236		U&IE, Part 2, Line 4, Columns 5 and 6, divided by 1,000
(4)	Net Loss Adjustment Expense Reserve for Line of Business	144	170	157		U&IE, Part 2A, Line 4, Column 9, divided by 1,000; and prior year AS
(5)	Net Unearned Premium Reserve for Line of Business	2,401	2,290	2,346		U&IE, Part 1A, Line 4, Column 5, divided by 1,000; and prior year AS
(6)	Net Earned Premium for Line of Business	4,445			Column (3)	U&IE, Part 1, Line 4, Column 4, divided by 1,000

As displayed in Table 69, $2.9 million of the Fictitious' total $31 million in policyholders' surplus at year-end 2018 was allocated to the homeowners line using the NAIC's allocation approach. Stated differently, less than 10% of the company's policyholders' surplus was allocated to homeowners using the IEE allocation. This exemplifies the caution noted earlier in relying on this method for prospective pricing or even retrospective evaluation of profitability. Given the catastrophe risk inherent in this line of business, which is quite evident based on 2018 experience, one might expect more than 10% of the surplus to be allocated to this line. To provide some perspective, in 2018 we saw that homeowners contributed more than 50% of the company's underwriting loss. If the IEE allocation is used in pricing for Fictitious, the rates will be inadequate and could eventually result in the insolvency of Fictitious.

Investment Gain by Line of Business Attributable to Insurance Transactions

Investment gain attributable to insurance transactions is allocated to line of business by applying the net investment gain ratio to funds attributable to insurance transactions for the particular line. Funds attributable to insurance transactions for a particular line are equal to the sum of mean net loss and LAE reserves, mean net unearned premium reserves and mean ceded reinsurance premiums payable for that line, reduced by agents' balances and the portion of prepaid expenses in the unearned premium reserves.

Funds attributable to insurance transactions for the line of business =

Mean net loss and LAE reserves for the line of business
+ Mean net unearned premium reserves for the line of business
+ Mean ceded reinsurance premiums payable for the line of business
- Mean agents' balances for the line of business
- Prepaid expenses in the unearned premium reserves.

The elements that go into the calculation of funds attributable to insurance transactions differ from total investable funds in two ways. First, mean policyholders' surplus is not included in the calculation of funds attributable to insurance transactions. This is because here the focus is on funds attributed to insurance transactions and not to capital and surplus. Second, prepaid expenses in the unearned premium reserves are not included in the calculation because they are not an investable asset; they have already been expensed. These expenses were not explicitly removed in the calculation of total investable funds because they are already out of policyholders' surplus, which is a component of the calculation.

Table 70 provides the calculation of investment gain attributable to insurance transactions for Fictitious' homeowners line.

TABLE 70

Data from Fictitious Insurance Company 2018 IEE and 2017 and 2018 Annual Statement (USD in 000s)

Line of Business: Homeowners Multiple Peril		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement (AS)
(1)	Investment Gain on Funds Attributable to Insurance Transactions for Line of Business	53			Column (35)	= (2) Current Year * (3) Mean
(2)	Net Investment Gain Ratio (all lines of business)	5.0%				Calculated in Table 65
(3)	Funds Attributable to Insurance Transactions for Line of Business	1,283	829	1,056		= (4) + (5) + (6) + (7) - (9) - [(6) * (8)]
(4)	Net Loss Reserve for Line of Business	1,311	1,161	1,236	Column (13)	U&IE, Part 2, Line 4, Columns 5 and 6, divided by 1,000
(5)	Net Loss Adjustment Expense Reserve for Line of Business	144	170	157	Column (15) + (17)	U&IE, Part 2A, Line 4, Column 9, divided by 1,000; and prior year AS
(6)	Net Unearned Premium Reserve for Line of Business	2,401	2,290	2,346	Column (19)	U&IE, Part 1A, Line 4, Column 5, divided by 1,000; and prior year AS
(7)	Ceded Reinsurance Premiums Payable for Line of Business	21	3	12		Calculated in Table 67
(8)	Prepaid Expense Ratio	29%				Calculated in Table 71
(9)	Agents' Balances for Line of Business	1,901	2,134	2,018	Column (21)	

As displayed in Table 70, $53,000 of the company's total $232,000 in net investment gain on the homeowners line was attributed to gains on insurance transactions using the NAIC approach.

Prepaid Expense Ratio

The ratio that is used to determine the amount of unearned premium reserves representing prepaid expenses is calculated for each line of business separately. It is the ratio of net acquisition expenses to net written premiums (column 1). Net acquisition expenses are calculated as the sum of commissions and brokerage expenses incurred (column 23); taxes, licenses and fees incurred (column 25); other acquisition, field supervisions and collection expenses incurred (column 27); and half of the general expenses incurred (50% of column 29).

The prepaid expense ratio for homeowners is calculated for Fictitious in Table 71.

TABLE 71

Data from Fictitious Insurance Company 2018 IEE and 2017 and 2018 Annual Statement (USD in 000s)

Line of Business: Homeowners Multiple Peril		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 4	Annual Statement
(1)	Prepaid Expense Ratio	29%				= (2) / (7)
(2)	Net Acquisition Expenses for Line of Business	1,315				= (3) + (4) + (5) + 50% of (6)
(3)	Commissions and Brokerage Expenses Incurred for Line of Business	867			Column (23)	
(4)	Taxes, Licenses and Fees Incurred for Line of Business	130			Column (25)	
(5)	Other Acquisitions, Field Supervision and Collection Expenses Incurred for Line of Business	169			Column (27)	
(6)	General Expenses Incurred for Lines of Business	298			Column (29)	
(7)	Net Written Premium for Line of Business	4,555			Column (1)	

The prepaid expense ratio for Fictitious was 29% in 2018.

Investment Gain by Line of Business Attributable to Capital and Surplus

The difference between net investment gain (loss) and the amount of investment gain attributed to insurance transactions is the amount of investment gain attributable to capital and surplus. Table 72 provides this calculation for Fictitious.

TABLE 72

Data from Fictitious Insurance Company 2018 IEE (USD in 000s)

Line of Business: Homeowners Multiple Peril		2018 Current Year	2017 Prior Year	Mean	2018 IEE Part II Total, Line 35	Annual Statement
(1)	Investment Gain Attributable to Capital and Surplus for Line of Business	179			Column (39)	= (2) - (3)
(2)	Investment Gain for Line of Business	232				Calculated in a Table 66
(3)	Investment Gain on Funds Attributable to Insurance Transactions for Line of Business	53			Column (35)	Calculated in Table 70

As displayed in Table 72, the amount of investment gain attributable to capital and surplus for homeowners was $179,000.

Total profit or loss

Finally, column 41 provides total profit (loss) by line of business. Table 73 demonstrates the calculation of total profit in 2018 for Fictitious' homeowners line. First, we will provide the calculation of pretax profit excluding all investment gain for homeowners, as shown in column 33. Then we will add the components of net investment gain in columns 35 and 39 to compute total profit in column 41.

Pretax profit excluding all investment gain is first computed for Fictitious' homeowners line of business as follows in Table 73.

TABLE 73

Data from Fictitious Insurance Company 2018 IEE (USD in 000s)
for Homeowners Multiple Peril

Column Number	IEE Part II Column Heading	Total Line 4	Notes
3	Premiums Earned	4,445	
5	Dividends to Policyholders	-	
7	Incurred Loss	3,789	
9	Defense and Cost Containment Expenses Incurred	74	
11	Adjusting and Other Expenses Incurred	360	
23	Commissions and Brokerage Expenses Incurred	867	
25	Taxes, Licenses and Fees Incurred	130	
27	Other Acquisitions, Field Supervision and Collection Expenses Incurred	169	
29	General Expenses Incurred	298	
31	Other Income Less Other Expenses	1	
33	Pre-Tax Profit of Loss Excluding All Investment Gain	(1,241)	= Column 3 minus Columns 5, 7, 9, 11, 23,25, 27, 29 plus Column 31

As displayed in Table 73, the NAIC allocation formula shows that Fictitious experienced a pretax loss of $1.2 million on its homeowners book in 2018, nearly all of which came from underwriting (since other income is $1).

The calculation of column 41 of Part II of the IEE shows that investment gains only offset $232,000 of the $1.2 million underwriting loss, such that homeowners showed an overall loss, after investment gain, of $1.0 million.

TABLE 74

Data from Fictitious Insurance Company 2018 IEE (USD in 000s) for Homeowners Multiple Peril			
Column Number	IEE Part II Column Heading	Total Line 35	Statement of Income Reference
33	Pre-Tax Profit or Loss Excluding All Investment Gain	(1,241)	
35	Investment Gain on Funds Attributable to Insurance Transactions	53	
39	Investment Gain Attributable to Capital and Surplus	179	
	Subtotal Net Investment Gain (loss) before Capital Gains Tax	232	
41	Total Profit or Loss	(1,009)	
42	%	22.7%	= Column 41 divided by Column 3

Out of the total $2.3 million in pretax profit for all lines earned by Fictitious in 2018, $(1.0) million was allocated to homeowners based on the NAIC calculation. This represents -23% of net earned premium in 2018. A review of column 41 of IEE shows that Fictitious also experienced pretax losses in the other liability, automobile physical damage and fidelity lines. Profits were earned in other lines to absorb the losses in these lines of business, the largest of which was achieved in workers' compensation ($3.3 million). This is why companies diversify insurance risks across property/casualty lines of business; the intent is that any losses would be offset by gains.

PART III – ALLOCATION TO LINES OF BUSINESS DIRECT

Part III provides the components of direct profit (loss) on a pretax basis, excluding investment gain. Investment gain is not considered because investment income is earned on the actual assets held by the company, which are net of reinsurance.

Different from Part II, the components used to compute profit (loss) in Part III are not readily available from the Annual Statement as presented. Unless assigned with the task of completing the IEE for their employer, most students will not use the information contained in Part III of the IEE. This publication is not intended to be an instruction manual for completing the IEE. As a result, we will only provide a brief discussion of the computation of each component, reconciling to Annual Statement exhibits when possible.

Columns 1 through 32

As with Part II, the even columns of Part III of the IEE provide the percent of the corresponding amounts in the odd-numbered columns to earned premium, in this case on a direct basis.

Direct premiums written in column 1 reconcile to Part 1B, Premiums Written, column 1, of the U&IE. Direct premiums written also reconcile to column 1 of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line and in total to Schedule T, column 2, line 59.

Direct premiums earned in column 3 reconcile to column 2 of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line, for all states plus any alien business, and in total to Schedule T, column 3, line 59.

Dividends to policyholders in column 5 should agree to line 17 of the Statement of Income, excluding dividends associated with business assumed and ceded.

Incurred loss in column 7 reconciles to column 6 of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line, for all states plus any alien business, and in total to Schedule T, column 6, line 59.

DCC expenses incurred and unpaid in columns 9 and 15, respectively, reconcile to columns 9 and 10, of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line, for all states plus any alien business. Incurred expenses also reconcile in total to the U&IE, Part 3, Expenses, line 1.1 of column 1.

A&O expenses incurred and unpaid in columns 11 and 17, respectively, cannot be tied directly to amounts presented in the Annual Statement. The NAIC instructions state, "IEE Part III, columns 9, 11, 15 and 17 must agree with IEE Part II, columns 9, 11, 15 and 17, respectively, excluding expenses relating to reinsurance assumed and ceded."[119] An insurance company knows which expenses are allocated to which lines and can therefore complete these columns.

Unpaid losses in column 13 reconcile to column 7 of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line, for all states plus any alien business, and in total to Schedule T, column 7, line 59.

Unearned premium reserves in column 19 reconcile to column 4 of the Exhibit of Premiums and Losses (Statutory Page 14 Data) by line, for all states plus any alien business.

Agents' balances in column 21 stem from policies written; therefore, companies know the applicable line of business. The amounts should agree to balances included within lines 15.1 plus 15.2, column 3 of the Assets page, excluding balances relating to reinsurance.

Other underwriting expenses in columns 23, 25, 27 and 29 cannot be found in the line of business breakdown of Part III. However, they should reconcile in total to the corresponding amounts in Part I of the IEE excluding amounts relating to reinsurance assumed or ceded. In fact, commissions and brokerage incurred on a direct basis in column 23 should reconcile in total to the sum of the amounts in line 2.1 plus 2.4 of IEE Part I, column 2.

Other income less other expense in column 31 also does not reconcile directly to amounts in the Annual Statement. However, the NAIC instructions note that it should agree in total to

[119] 2018 NAIC Annual Statement Instructions Property/Casualty, page 422.

amounts in line 15 minus line 5 of the Statement of Income that apply to direct business only (i.e., "excluding expenses related to reinsurance assumed or ceded").[120]

Calculation of Pretax Profit or Loss Excluding All Investment Gain (Column 33)

Column 33 provides pretax profit (loss) excluding all investment gains and is calculated from the information contained in the previous columns of Part III of the IEE, using the same formulaic approach as in Part II. Specifically,

Pretax profit or loss excluding all investment gains =

Premiums earned (column 3)
- Dividends to policyholders (column 5)
- Incurred loss (column 7)
- DCC expenses incurred (column 9)
- A&O expenses incurred (column 11)
- Commission and brokerage expenses incurred (column 23)
- Taxes, licenses and fees incurred (column 25)
- Other acquisitions, field supervision and collection expenses incurred (column 27)
- General expenses incurred (column 29)
+ Other income less other expenses (column 31).

INTERROGATORIES

The interrogatories to the IEE are actually shown before the Parts I through III. The interrogatories provide explanatory notes on the information contained in Parts I through III, the most important of which is Interrogatory 4, which provides information on the process by which the allocations of expenses and profit are made. Specifically, question 4 asks:

> 4. The information provided in the Insurance Expense Exhibit will be used by many persons to estimate the allocation of expenses and profit to the various lines of business.
>
> 4.1 Are there any items requiring special comment or explanation?
>
> 4.2 Are items allocated to line of business in Parts II and III using methods not defined in the instructions?
>
> 4.3 If yes, explain.[121]

Questions 4.1 and 4.2 each require "yes" or "no" responses. If the company answers "yes" to either question, the company is required to provide an explanation, so the user can consider differences in the company's process relative to what is stated in the instructions.

[120] Ibid., page 422.
[121] 2018 IEE.

CHAPTER 19. RISK-BASED CAPITAL

OVERVIEW

The Risk-Based Capital (RBC) system was developed by the National Association of Insurance Commissioners (NAIC) and has been used since 1994 to provide a means for the early detection of insurance company insolvency. It was implemented for property/casualty companies in part in response to reports issued by the federal government in the late 1980s and early 1990s questioning the ability of state governments to regulate insurance companies.[122] These reports emerged in the wake of four of the largest property/casualty insurance company insolvencies in the history of the U.S. insurance industry: Mission Insurance Company, Transit Casualty Company, Integrity Insurance Company and Anglo-American Insurance Company.

The implementation of the RBC system was a significant advancement in solvency monitoring by state governments and has also served as the foundation for many other capital models that followed, including those currently used by rating agencies.

There are two main components to the RBC system:

1. RBC formula: The RBC formula results in a minimum level of required capital determined (the authorized control level benchmark, or ACL) formulaically using an approach that is standard to all insurance companies in a particular industry group (e.g., property/casualty, life and health). The minimum level of required capital is intended to reflect the capital needed to support the risks faced by insurance companies. The company's actual recorded capital and surplus is compared to the minimum required capital to produce the RBC ratio.[123] The RBC ratio is compared to a range of values that define the levels of company and regulatory action.
2. RBC for Insurers Model Act:[124] The RBC Model Act, as adopted in the laws and regulations of each state, provides the state insurance regulator with authority to take specific action when a company's RBC ratio falls below certain thresholds.

The RBC system is applied to property/casualty, life and health insurance companies. Certain entities are exempt from the RBC system, including title insurance companies, monoline

[122] The most widely known of these reports was written by the U.S. House of Representatives Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce titled, "Failed Promises – Insurance Company Insolvencies" (see U.S. House of Representatives Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce. "Failed Promises-Insurance Company Insolvencies." 101 Cong., 2nd sess., February 1990. Washington, D.C.: GPO, 1993).

[123] The company's actual recorded capital and surplus is adjusted to reflect certain items that will be introduced later in this chapter.

[124] NAIC RBC for Insurers Model Act (Model #312).

financial guaranty insurance companies and monoline mortgage guaranty insurance companies[125]. Other exemptions may apply based on individual state laws and regulations.

This publication will focus on the RBC system as it applies to property/casualty insurance companies. The formulas differ for property/casualty, life and health insurance companies, reflecting differing risk factors for each.

Insurance companies are required to file their RBC report with the NAIC by March 1 based on information evaluated as of the prior year-end (December 31). An insurance company's RBC report provides its RBC formula calculations and management discussion and analysis of the RBC results. The RBC report is confidential; therefore, details of the calculation are not available to the public. However, the summarized results of the RBC formula calculations are shown in the Five-Year Historical Data exhibit of the Annual Statement, which is in the public domain. The disclosure shows the overall result of the authorized control level risk-based capital calculation together with the company's total adjusted capital, which can be compared to determine the RBC ratio.

RBC FORMULA

Overview

The RBC formula is computed by applying a set of factors to asset, reserve, recoverable and premium items reported in an insurance company's Annual Statement. The size of the factor depends on the level of risk associated with each item; the greater the risk, the greater the factor. The application of the factors to the associated Annual Statement items results in what are commonly referred to as "risk charges."

The formula is not a comprehensive measure of every risk for an insurance company; rather it only considers those risks that are material to an insurance company. Further, risks associated with a company's business plans and strategy, management, internal controls, systems, reserve adequacy and ability to access capital are not considered as these risks are difficult to quantify.

The general structure of the RBC formula has remained intact since it was first implemented in 1994, although the risk charges have been subject to periodic revisions since that time. In recent years, additional risk categories have been introduced to the formula to reflect evolving practices around the management and quantification of risk in the insurance industry. The RBC formula was developed based on its predecessor, the life RBC formula, which the NAIC implemented a year earlier in 1993.[126]

[125] It should be noted that the NAIC is currently in the process of testing and implementing a proposed risk-based mortgage guaranty capital model, see: http://www.naic.org/cmte_e_mortgage_guaranty_insurance_wg.htm

[126] RBC for stand-alone health insurers was not implemented until 1998.

Risk Categories

The current property/casualty RBC formula includes eight risk categories, with most denoted by the letter "R" with an indicator subscript to identify the particular risk:

- R_0 Subsidiary Insurance Companies and Miscellaneous Other Amounts
- R_1 Asset Risk – Fixed Income
- R_2 Asset Risk – Equity
- R_3 Asset Risk – Credit
- R_4 Underwriting Risk – Reserves
- R_5 Underwriting Risk – Net Written Premium
- R_{cat} Catastrophe Risk
- \- Operational Risk[127]

Broadly speaking, the major categories of risk captured by the property/casualty RBC formula are similar to those within the life and health formulas, focusing mainly on the risks associated with the company's investments and other recoverable-based assets ("asset risk"), as well as risks associated with the issuance of insurance policies ("underwriting risk"). Visually, the formulas differ by the use of the letter "R" denoting the risks for property-casualty, while the letter "C" is used for the life formula and "H" for the health formula.

Asset risk is a much smaller portion of the property/casualty total risk charge compared to the life industry. This is because life insurance policies tend to be purchased as investment vehicles, whereas property/casualty products are purchased to protect the consumer from financial loss. As a result, property/casualty companies tend to invest in short-term, liquid investments (which are generally considered to be lower risk) due to the relatively shorter duration of liabilities.

As of December 31, 2018, the life insurance industry held more than 17 times the amount of recorded surplus in admitted assets whereas property/casualty insurers held less than three times the amount of surplus in admitted assets[128].

Subsidiary Insurance Companies and Miscellaneous Other Amounts

The R_0 charge considers the risks associated with investments in affiliated entities as well as miscellaneous off-balance sheet and other items.

[127] Operational Risk is added as a final step in the calculation, after applying the covariance adjustment between other risk types, and does not have a corresponding "R" indicator.

[128] S&P Global Market Intelligence, based on YE2018 Annual Statement data.

Affiliated investments fall into two broad categories: insurance affiliates that are subject to RBC and affiliates that are not subject to RBC. The latter group includes insurance affiliates that are not subject to RBC, such as title insurers, monoline financial guaranty insurers, and monoline mortgage guaranty insurers, all of which are currently exempt from the RBC system.

R_0 contains the risk charges associated with affiliated insurers subject to RBC (whether property/casualty, life or health), along with alien insurance affiliates.[129] All other affiliates are subject to R_2 charges.

The miscellaneous off-balance sheet and other items component includes non-controlled assets, guarantees for affiliates, contingent liabilities and deferred tax assets admitted under statutory-basis accounting.

Asset Risk

Within the property/casualty RBC formula, there are three categories of asset risk:

- R_1 Asset risk – Fixed income
- R_2 Asset risk – Equity
- R_3 Asset risk – Credit

R_1 and R_2 are risks associated with admitted invested assets (other than those already captured in R_0), which are shown on lines 1 through 11, column 3, on the asset side of the statutory balance sheet on page 2 of the Annual Statement. The R_1 charge considers changes in interest rates and potential default of fixed income investments (e.g., cash, bonds, mortgage loans). The R_2 charge considers changes in asset valuations for non-fixed income investments (e.g., stocks, real estate).

As of December 31, 2018, bonds represented approximately 51% of the admitted assets of the property/casualty insurance industry, with the next largest investment category dropping to 20%, represented by holdings of common (19%) and preferred (<1%) stocks, and 5% in cash.[130]

R_3 considers the credit risk associated with receivables on the balance sheet, which include items listed on lines 14 and subsequent on the asset side of the statutory balance sheet, as well as risk associated with reinsurance recoverables. Additionally, if a company has written

[129] According to the Glossary of Terms in the textbook Property-Casualty Insurance Accounting issued by Insurance Accounting & Systems Association, Inc., 8th ed. (2003), First Addendum (2006), an alien insurance company is defined as "An insurer or reinsurer domiciled outside the U.S. but conducting an insurance or reinsurance business in the U.S."

[130] S&P Global Market Intelligence, based on YE2018 Annual Statement data

5% or more of its premiums in accident & health lines in the last three years, it is also subject to a Health Credit Risk charge.

Underwriting Risk

There are two categories of underwriting risk in the property/casualty RBC formula:

- R_4 Underwriting risk – Reserves
- R_5 Underwriting risk – Net written premium

The reserve risk charge (R_4) is concerned with past business while the premium risk charge (R_5) is concerned with future business. Reserve risk is the risk that the company's recorded loss and loss adjustment expense (LAE) reserves will develop adversely, under the assumption that the current reserve balance is adequate. Written premium risk considers the risk that the company's business in the following year will be unprofitable.

According to the NAIC RBC instructions, "Underwriting risk is the largest portion of the risk-based capital charge for most property/casualty insurance companies and makes up approximately 55 percent of the aggregate industry risk-based capital prior to the covariance adjustment."[131] This contrasts with life insurance companies, where the predominant portion of the RBC charge is asset risk.

Property/casualty insurance companies tend to concentrate in short-term, relatively fixed and liquid investment categories given the short duration of most property/casualty insurance products sold and the need to have funds readily available to pay claims. The smaller volume and relatively short-term nature of the assets for property/casualty insurance companies significantly limits the asset risk relative to the size of underwriting risk, as compared to life insurance companies.

Catastrophe Risk

The catastrophe risk charge (R_{cat}) was added to the RBC formula in 2017 after more than a decade of development.[132] It covers risks associated with earthquake and hurricane events and considers modeled losses at the worst year in 100. Projected losses can be calculated using one of the approved commercially available catastrophe models (e.g., AIR, RMS, EQECAT). Beginning in 2019, companies will also be able to use their own internally developed catastrophe model, upon obtaining written permission by their domestic (where model output is used for a single entity) or lead state (where model output is used for the whole group) insurance regulator.

[131] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 20.
[132] Catastrophe Risk was included as part of RBC filings on an informational only basis only from 2013-16 as part of the development phase.

The catastrophe risk charge applies on a net of reinsurance basis, with a corresponding contingent credit risk charge for certain categories of reinsurers.

Covariance Adjustment

Risk charges R_0 through R_{cat} are aggregated in the RBC formula to calculate the overall RBC requirement, before the consideration of operational risk, as follows[133]:

$$R_0 + \sqrt{R_1^2 + R_2^2 + R_3^2 + R_4^2 + R_5^2 + R_{cat}^2}$$

= Total RBC After Covariance Before Basic Operational Risk

The square root calculation within the RBC formula is commonly referred to as the "covariance adjustment." Rather than summing up the individual risk charges (R_1 through R_{cat}), it is assumed that the individual risk charge categories are independent of one another. That is, the formula reflects diversification among these risk categories, thereby assuming that the aggregate risk is less than the sum of risk of the independent components. For example, the formula assumes that the risk of default on an insurance company's invested assets (e.g., bonds, stocks) is independent of the performance of its loss reserves. Taking the square root of the sum of the squares for R_1 through R_{cat} increases the dependency of the larger risks in the calculation and decreases the significance of the smaller risk categories in the overall aggregate RBC requirement.

R_0 is kept outside of the covariance adjustment because the risk for investments in insurance company subsidiaries is believed to be directly correlated with the combination of the risks specific to the reporting entity (i.e., the other risk charges R_1 through R_{cat}). Therefore, the risk for investments in insurance company subsidiaries is additive to the aggregate of the investment and underwriting risks of the reporting entity for which RBC is being calculated. In other words, RBC should not depend on the organizational structure of the insurance company and investments in insurance company subsidiaries that are subject to RBC do not provide a diversification benefit.

The covariance calculation is applied similarly in the life and health RBC formulas, keeping C_0 and H_0 outside of the square root like R_0.

Basic Operational Risk

Introduced in 2018,[134] the basic operational risk charge considers the risk of financial loss resulting from operational events, such as the inadequacy or failure of internal systems,

[133] Note that under certain circumstances, discussed later, half of the reinsurance component of R_3 is moved in to R_4 for the purpose of the covariance adjustment calculation

[134] The operational risk charge was formally introduced in 2017, but applied a 0% risk charge that year

personnel, procedures or controls, as well as external events. This includes legal risk but excludes reputational risk arising from strategic decisions. The risk charge accounts for operational risks that are not deemed to be already reflected in the existing risk categories.

The basic operational risk charge uses a percentage of RBC or "add-on" approach that applies a risk factor to the Total RBC After Covariance Before Basic Operational Risk amount described above. The operational risk charge will be reduced by the sum of offset amounts reported by direct Life RBC filing insurance subsidiaries adjusted for the percentage of ownership in the direct life insurance subsidiaries (but not to produce a charge that is less than zero).

Components of the Charges

Within subsequent sections of this chapter, we will walk through the components of each charge that goes into the RBC formula, deliberately leaving out certain information that would be necessary to fully prepare and issue the RBC report for a company. We will reference the requirements of the RBC formula as it stands for year-end 2018 submissions, noting in a few places modifications that are expected in the 2019 version of the RBC formula.

The NAIC issues instructions on how to prepare the RBC calculation, including an instructional forecasting spreadsheet containing an example of the necessary formulas. Additionally, RBC software is available from Annual Statement software vendors and is used by insurance companies for filing with state regulatory authorities. This publication is only intended to provide an overview of the RBC formula and is not intended to supplant the NAIC RBC instructions or electronic filing requirements.

Before we delve into the details, let us provide some perspective on the relevance of each risk category to the overall formula. Table 75 provides a summarization of figures provided by the NAIC in its presentation of 2018 RBC results for the property/casualty insurance industry:[135]

[135] NAIC, Summary: Aggregate P/C RBC Results By Year, 2018, http://www.naic.org/documents/research_stats_rbc_results_pc.pdf

TABLE 75

Aggregate for 2,465 Property/Casualty Companies RBC by Category USD in $million	
2018 Risk Category	Totals
R_0 – Subsidiary Insurance Companies and Misc. Other Amounts	58,786
R_1 – Asset Risk – Fixed Income	8,046
R_2 – Asset Risk – Equity	119,069
R_3 – Asset Risk – Credit	9,301
R_4 – Underwriting Risk – Reserves	114,979
R_5 – Underwriting Risk – Net Written Premium	75,532
R_{cat} – Catastrophe Risk	52,510

Asset Risk – Equity (R_2) and Underwriting Risk – Reserves (R_4) represented the largest risk charges within the RBC formula for the property/casualty insurance industry in 2018, with $119 billion and $115 billion respectively.

Despite representing approximately half of the invested assets of the property/casualty insurance industry in 2018 (see Table 2), the asset risk charge for fixed income investments is the smallest component of the RBC charge for the industry. This is because property/casualty insurers tend to invest in relatively safe, high-credit quality bonds.

On the other hand, the asset risk charge for equity brings the highest charge, reflecting the increased risk associated with these investments over fixed income. The NAIC's report on 2018 RBC results shows that the equity risk component has been growing in significance relative to other risk charges over the past decade, becoming the largest risk component for the first time in 2017. This reflects a period where common stocks have increased from 12% of property/casualty insurers' total admitted assets in 2008 to 19% in 2018.

Table 76 shows the impact of the Covariance Adjustment. Applying the sum-of-squares approach to the R_1 through R_{cat} charges reduces the combined total of these risk charges by approximately 50%, reflecting independence between each of the risk types.

TABLE 76

Aggregate for 2,465 Property/Casualty Companies
RBC by Category
USD in $million

2018 Risk Charges for R_1 through R_{cat}	Totals	Distribution	Squared Totals	Distribution
R_1 – Asset Risk – Fixed Income	8,046	2%	64,738,615	0%
R_2 – Asset Risk – Equity	119,069	31%	14,177,508,681	39%
R_3 – Asset Risk – Credit	9,301	2%	86,512,359	0%
R_4 – Underwriting Risk – Reserves	114,979	30%	13,220,264,494	37%
R_5 – Underwriting Risk –Net Written Premium	75,532	20%	5,705,129,401	16%
R_{cat} – Catastrophe Risk	52,510	14%	2,757,330,871	8%
Sum of R_1 – R_{cat}	379,438	100%	36,011,484,420	100%
Total RBC (excl R_0) After Covariance Before Basic Operational Risk	189,767	= square root of the sum of Squared Totals above		
Covariance Adjustment	- 189,672			

Recall that the covariance adjustment increases the dependency of the larger risks and decreases the significance of the smaller risk categories in the overall aggregate RBC requirement. As displayed in the Table 76, squaring each of charges R_1 through R_{cat} and summing the results shows the increased significance of the two largest risk categories (R_2 and R_4), which now contribute 76% to the total on a squared basis, up from 61% based on a simple sum. The other risk categories have similarly seen their contribution shrink.

THE RBC CHARGE FOR SUBSIDIARY INSURANCE COMPANIES AND MISCELLANEOUS OTHER AMOUNTS (R_0)

The R_0 charge considers the risks associated with investments in subsidiary insurance companies as well as miscellaneous off-balance sheet and other items.

Subsidiary and affiliated insurance companies are only considered within R_0 if they are U.S. domiciled entities subject to RBC, or if they are alien insurers (i.e., foreign to the U.S.). Recall that certain insurance companies are not subject to RBC, such as title insurers, monoline mortgage guaranty insurers and monoline financial guaranty insurers. All other affiliated entities, including U.S. insurance subsidiaries not subject to RBC, are considered within the Asset Risk – Equity (R_2) module.

Selected definitions

Term definitions will become important as we walk through the risk charges for affiliated entities. Statutory Accounting Principles (SAP), specifically Statement of Statutory Accounting Principles (SSAP) No. 97, Investments in Subsidiary, Controlled and Affiliated Entities, define the following terms:

Parent	"An entity that directly or indirectly owns and controls the reporting entity."[136]
Subsidiary	"An entity that is, directly or indirectly, owned and controlled by the reporting entity."[137]
Affiliate	"An entity that is within the holding company system or a party that, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with the reporting entity. An affiliate includes a parent or subsidiary and may also include partnerships, joint ventures, and limited liability companies."[138]
Control	"The possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of the investee, whether through the (a) ownership of voting securities, (b) by contract other than a commercial contract for goods or non-management services, (c) by common management, or (d) otherwise. Control shall be presumed to exist if a reporting entity and its affiliates directly or indirectly, own, control, hold with the power to vote, or hold proxies representing 10% or more of the voting interests of the entity."[139] SSAP No. 97 further states that control is measured at the holding company level. For example, the 10% benchmark would apply to a group consisting of two affiliates where one affiliate owns 7% of a company and the other affiliate owns 4% of that same company. Each member of the group has control over the company as the sum of their ownership percentages exceeds 10%.
Investments in SCA entities	An insurance company's investment in subsidiaries, controlled and affiliated entities (SCAs), are admitted assets to the extent they conform to the requirements of SSAP No. 97.

Insurance Affiliates Subject to RBC

For U.S. insurers subject to RBC, including those subject to the life or health RBC requirements, the total R_0 charge for a particular subsidiary is limited to the RBC of the subsidiary, across all common stocks and preferred stocks, adjusted by the reporting entity's

[136] SSAP No. 97, Investments in Subsidiary, Controlled and Affiliated Entities, "Definitions" section.
[137] Ibid.
[138] Ibid.
[139] Ibid.

ownership (pro rata) share in the subsidiary. The theory is that, through ownership, the reporting entity is subject to the same risks as its subsidiary.

According to the NAIC's 2018 written instructions for RBC,[140] the relevant RBC measure from the subsidiary or affiliate is defined as:

- For a P/C and Health subsidiary RBC filings:
    - Total RBC After Covariance Before Basic Operational Risk

- For a Life subsidiary RBC filing, the sum of:
    - Total RBC After Covariance Before Basic Operational Risk
    - Primary Security shortfalls for all cessions covered by Actuarial Guideline XLVIII, multiplied by two

Ownership of Common Stock

The RBC charge for investments of an insurance company subsidiary depends on the accounting method used by the reporting entity to report the investment.[141]

For investments in insurance affiliates recorded on the equity method, and for which unamortized admitted goodwill is zero or non-existent (i.e., no adjustment to the book/carrying value of the investment), the R_0 charge for ownership of common stock in the insurance affiliate subject to RBC is equal to the minimum of the following:

- The total RBC of the affiliate multiplied by the percentage of ownership in the common stock
- The book/adjusted carrying value of the common stock (greater than 0) as recorded by the reporting entity

For all other insurance affiliates, the R_0 charge for ownership of common stock in these affiliates is made up of two components:

1. An R_0 component, which is equal to the minimum of the following:
    a. The total RBC of the affiliate multiplied by the percentage of ownership in the common stock; or

[140] NAIC RBC Property & Casualty 2018 Forecasting & Instructions, page 1.

[141] According to SAP (SSAP No. 97), admitted investments in insurance company SCAs are recorded on the reporting entity's balance sheet using one of two methods: the market valuation approach or equity method. Under the market valuation approach, investments in insurance company SCAs are based on the market value of the SCA, adjusted for the reporting entity's ownership percentage. Market value is equivalent to fair value. Under the equity method, investments in insurance company SCAs are recorded based on the reporting entity's proportionate share of audited statutory equity of the SCA's balance sheet, adjusted for any unamortized goodwill. Under this method, the reporting entity records the initial investment at cost then essentially adjusts the value over time based on the reporting entity's share in the company's income (loss). At any point in time, the recorded amount is called the "carrying value."

   b. The statutory surplus of the affiliate multiplied by the percentage of ownership of the total common stock.
2. An R_2 component, which is equal to one of the following (limited to a minimum of zero):
   a. The amount of the book/carrying value that exceeds the value from the R_0 component (above), when the total RBC of the affiliate multiplied by the percentage of ownership in the common stock is greater than the book/carrying value; otherwise
   b. The maximum of the following:
      i. The excess of the book/adjusted carrying value over the pro rata statutory surplus value for the affiliate multiplied by 22.5%; or
      ii. The amount that RBC of the affiliate multiplied by the percentage of ownership in the common stock exceeds the value obtained in the R_0 component (above).

Recall that RBC calculations are not in the public domain. Attempts to recalculate an insurance company's RBC often make a simplifying assumption that the R_0 charge for ownership in common stock of an SCA is equal to the SCA's RBC (adjusted for ownership).

Ownership of Preferred Stock

The reporting entity's R_0 charge for investments in preferred stock of insurance subsidiaries depends on whether the subsidiary has excess RBC. Excess RBC is defined as the amount of RBC of the affiliate that exceeds the total value of the outstanding common stock. If the excess RBC is greater than zero, the RBC charge for ownership in preferred stock is the minimum of the following:

- The pro rata share of the excess RBC
- The book/adjusted carrying value of the preferred stock (greater than zero) as recorded by the reporting entity

The pro rata share is equal to the percentage of the affiliate's total outstanding preferred stock value that is owned by the company. To determine the value of total outstanding common stock or total outstanding preferred stock, divide the book/adjusted carrying value of the investment by the percentage of ownership.

If the excess RBC is less than or equal to zero, then the RBC charge for the company's ownership in the preferred stock of its affiliate is zero.

Occasionally, a company might own preferred stock in an affiliate subject to RBC but no common stock. When this occurs, the company must determine if there is any excess by calculating the notional value of the total outstanding value of the affiliate's common stock

and/or preferred stock using one of the accepted methods from the Purposes and Procedures Manual of the NAIC Investment Analysis Office.

Alien Insurance Affiliates

Alien insurance companies are entities that are incorporated under the laws of a country outside the U.S., therefore these entities are not themselves subject to RBC. The reporting entity's RBC charge for investments in directly owned alien affiliates is equal to the Annual Statement carrying value of the company's interest in the affiliate multiplied by a factor of 0.500. For indirectly owned alien affiliates, this amount is further adjusted to reflect the reporting entity's ownership on the holding company.

Off-balance Sheet and Other Items

Off-balance sheet and other items include amounts that are either restricted or not recorded by the insurance company in its statutory financial statements yet still represent assets and/or potential liabilities of the insurance company and therefore expose the company to risk. Off-balance sheet and other items are disclosed in the Notes to Financial Statements and General Interrogatories of the Annual Statement. The following represents the categories of such items included in the R_0 charge:

1. Non-controlled assets: This category of assets includes the following:
    - Collateral loaned to others from securities lending programs
    - Assets that are reported on the company's balance sheet but for which the company does not have exclusive control over, thereby exposing the company to increased investment risk
    - Assets sold or transferred that are subject to a put option, thereby enabling the purchaser to sell the assets back to the insurance company
2. Guarantees for the benefit of affiliates: These are guarantees that may expose the company's assets to contingent liability exposure. An example would be a guarantee made by a company to pay an outstanding loan held by an affiliate with a third party in the event that the affiliate was unable to meet its obligation to that third party.
3. Contingent liabilities: This includes amounts for which the insurance company may be held responsible but for which the amount cannot be determined and therefore is not entered on the balance sheet. An example includes structured settlements for which the insurance company purchases an annuity from a life insurance company to make structured payments to claimants in order to close out a claim. The insurance carrier would close the claim since it paid the life insurer to make the claim payments on its behalf. However, if the life insurance company fails to pay, the insurance company would still be ultimately responsible for settling the liability. This is a contingent liability to the insurance company.

4. Deferred tax assets: This comprises admitted adjusted gross deferred tax assets (DTAs) as described in SSAP No. 101, paragraphs 11a and 11b. The source for the DTA amounts to use in the calculation is found in the Annual Statement, Notes to the Financial Statements, Note 9, Part A, Section 2.

For almost all of the items listed above, a 1.0% factor is applied to all off-balance sheet amounts for purposes of inclusion in the R_0 charge. The one exception is for conforming securities lending programs, which are those programs that have specified elements that lower the associated risk,[142] where a reduced charge of 0.2% is applied.

Additionally, the charge associated with deferred tax assets can be reduced to 0.5% when the insurance company either filed its own separate Federal income tax return or was included in a consolidated Federal income tax of which the common parent is an insurance company.

THE RBC CHARGE FOR ASSET RISK ASSOCIATED WITH FIXED INCOME INVESTMENTS (R_1)

R_1 includes the charge for interest rate and default risk associated with fixed income investments in the following categories:

1. Bonds
2. Off-balance sheet collateral and Schedule DL, Part 1, Assets
3. Other long term assets, including mortgage loans, low income housing tax credits and working capital finance investments
4. Miscellaneous assets, including cash, cash equivalents, other short-term investments and non-admitted collateral loans
5. Replication (synthetic asset) transactions and mandatorily convertible securities

Typically, the charge relating to bonds overwhelmingly dominates this risk category for property/casualty insurers. In general, the charge for each of these investment types is based on a factor determined by the NAIC multiplied by the book/adjusted carrying value of the investment.

In addition to the charge for the aforementioned types of fixed income investment categories, there are two charges reflecting the level of diversification in the entity's fixed income portfolio. The first is the bond size factor, and the second is the asset concentration factor.

[142] According to the NAIC RBC Property & Casualty 2018 Forecasting & Instructions, page 16, conforming securities lending programs are those comprising all of the following: (1) a written plan approved by the company's board of directors describing the company's securities lending program and ways it can invest collateral; (2) written procedures that the company must follow to monitor and control the risks of the program; (3) a binding agreement between the insurance company and the borrowers of the insurer's securities; and (4) collateral in the form of investments that are allowable by the company's domiciliary state (e.g., cash, cash equivalents, federally guaranteed investments).

The fewer the bond holdings and greater the concentration in individual issuers or borrowers, the greater the associated charge.

A brief discussion of each charge is provided below, with examples to illustrate their calculation as deemed appropriate.

Bonds and the Bond Size Factor

The RBC charge for unaffiliated bond investments is equal to the book/adjusted carrying value of the bond multiplied by a factor, where the factors vary based on the bond class. The factors are as shown in Table 77.

TABLE 77

NAIC bond class	RBC factor
Class 01 – Highest credit quality	
- U.S. government, guaranteed by U.S. government	0.000
- U.S. government, not backed by full faith and credit of U.S. government	0.003
- All other	0.003
Class 02 – High credit quality	0.010
Class 03 – Medium credit quality	0.020
Class 04 – Low credit quality	0.045
Class 05 – Lowest credit quality	0.100
Class 06 – In or near default	0.300

As displayed in Table 77, the RBC factors increase with the amount of perceived credit risk, starting with 0.000 for U.S. government bonds that are backed by the full faith and credit of the government and therefore have almost no default risk, all the way to a factor of 0.300 for bonds issued by companies that are in or near default. According to the NAIC RBC instructions, the bond factors are determined "based on cash flow modeling using historically adjusted default rates for each bond category." The instructions further explain: "For each of 2,000 trials, annual economic conditions were generated for the 10-year modeling period. Each bond of a 400-bond portfolio was annually tested for default (based on a "roll of the dice") where the default probability varies by NAIC designation category and that year's economic environment."[143]

In addition to the charge for each class of bond, there is a separate charge to reflect the level of diversification called the bond size factor. According to the NAIC RBC instructions, "The size factor reflects additional modeling for different size portfolios that shows the risk increases as the number of bond issuers decreases. Because most insurers' bond portfolios are considerably smaller than the portfolio used to develop the model bond risk, the basic bond factors understate the true default risk of these assets. The bond size factor adjusts the

[143] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 7.

computed RBC for those bonds that are subject to the size factor to more accurately reflect the risk."[144]

The bond size factor, which measures the degree of diversification in the investment portfolio, is computed as the weighted average number of issuers in a portfolio subject to the adjustment, with the weights prescribed by the NAIC depending on the number of issuers. Table 78 displays the formula, including the NAIC weights.

TABLE 78

Bond Size Factor			
	# of bond issuers (1)	Weights (2)	Weighted # Issuers (3) = (1) * (2)
First 50	XXXX	2.5	
Next 50	XXXX	1.3	
Next 300	XXXX	1.0	
More than 400	XXXX	0.9	
Total	XXXX		

The bond size factor is equal to the total in column 3 divided by the total in column 1 in Table 79, minus 1. For example, if a reporting entity invests in 500 bonds, the bond size factor would be 0.2. The calculation of this factor is provided in Table 79 as the sum of the weighted number of issuers in column 3 of 580 divided by the total number of issuers in column 1 of 500, minus 1.

TABLE 79

Example of Bond Size Factor			
# of bond issuers	(1)	Weights (2)	Weighted # Issuers (3) = (1) * (2)
First 50	50	2.5	125
Next 50	50	1.3	65
Next 300	300	1.0	300
More than 400	100	0.9	90
Total	500	1.2	580

The bond size factor is applied to the RBC calculated for bonds subject to adjustment. As displayed in Table 79, the weights decrease with the number of issuers. Therefore, the more

[144] Ibid.

issuers, the lower the factor applied in the RBC calculation and the lower the additional RBC amount required. For a reporting entity investing in fewer than 50 bonds, the factor is 1.5 times the RBC required for the bonds (=2.5 – 1); for an entity investing in 1,000 bonds, the factor is 0.03.[145]

The bond size factor is calibrated such that the break-even point where the factor equals 1.0 is set at 1,300 bonds. Portfolios containing 1,300 or more bonds will receive a discount to their RBC charge for bonds.

Bonds that are subject to the bond size factor include unaffiliated bonds in classes 02 through 06, plus non-U.S. government bonds in class 01.

Off-balance Sheet Collateral and Schedule DL, Part 1, Assets

The RBC charge for off-balance sheet collateral and Schedule DL assets considers the risk associated with securities lending programs. Recall the discussion of securities lending programs in Chapter 13. Overview of Schedules and Their Purpose. The risk associated with these programs is that the reporting entity will lose money on the reinvestment of collateral posted by the borrower. Collateral held by the reporting entity in conjunction with securities lending programs is reported one of three ways in the Annual Statement:

1. In investment schedules that correspond to the invested collateral (e.g., Schedule A, B, BA, D, DA and E), which roll up into the balance sheet
2. In Schedule DL, Part 1, of the Annual Statement, which rolls into line 10 of the asset side of the balance sheet
3. Off-balance sheet, due to not being recorded in the financial statements

The R_1 charge considered herein includes a provision for these assets as included in items 2 and 3 above. The charge is equal to the book/adjusted carrying value multiplied by a factor, where the factor is equal to that for the particular asset class. For example, the same factors by class applicable to bonds are also used in this calculation.

Other long term assets – Mortgage loans

The RBC charge for mortgage loans for property/casualty insurers is computed as the book/adjusted carrying value of the loans multiplied by a factor of 0.050. This is based upon the factors developed by the Life RBC formula, which ranged from 3% to 20%.

Other long term assets – Working Capital Finance Investments

The booked/adjusted carrying value of working capital finance investments can be found in the Notes to Financial Statements, lines 5M(01a) and 5M(01b) in column 3, of the Annual

[145] 0.03 = [[(50*2.5) + (50*1.3) + (300*1.0) + (600*0.9)] / (1,000)] – 1.0

Statement. Those in line 5M(01a) – NAIC Designation 1 – get a risk charge of 0.0038, while those in 5M(01b) – NAIC Designation 2 – have a factor of 0.0125.

Low Income Housing Tax Credits (LIHTC)

There are five categories of LIHTC investments listed below, which must be reported in accordance with Statement of Statutory Accounting Principles (SSAP) No. 93, Low Income Housing Tax Credit Property Investments:

- Federal guaranteed
- Federal non-guaranteed
- State guaranteed
- State non-guaranteed
- All other

The associated NAIC factor used to calculate the RBC charge varies by category.

In order to be classified as a federal guaranteed LIHTC investment, it must have an all-inclusive guarantee from an ARO[146]-rated entity which guarantees the yield on the investment. The RBC charge for a federal guaranteed LIHTC investment is equal to the book/adjusted carrying value times 0.0014.

To be classified as a federal non-guaranteed LIHTC investment, it must include the following risk mitigation factors:

a) A level of leverage below 50%. For an LIHTC fund, the level of leverage is measured at the fund level; and
b) A tax credit guarantee agreement from a general partner or managing member, requiring the general partner or managing member to reimburse investors for any shortfalls in tax credits due to errors of compliance. For an LIHTC fund, a tax credit guarantee is required from the developers of the lower-tier LIHTC properties to the upper-tier partnership.

The RBC charge for a federal non-guaranteed LIHTC investment is equal to the book/adjusted carrying value times 0.0260.

To be classified as a state guaranteed LIHTC investment, it must minimally meet the federal requirements for guaranteed LIHTC investments. The RBC charge for a state guaranteed LIHTC investment is equal to the book/adjusted carrying value times 0.0014.

[146] NAIC's Acceptable Rating Organizations

To be classified as a state non-guaranteed LIHTC investment, it must minimally meet the federal requirements for non-guaranteed LIHTC investments. The RBC charge for a state non-guaranteed LIHTC investment is equal to the book/adjusted carrying value times 0.0260.

All other federal and state LIHTC investments that do not meet the requirements of the above categories will be classified in the All Other LIHTC investments category. The RBC charge for all other LIHTC investments is equal to the book/adjusted carrying value times 0.1500.

Miscellaneous Assets

The RBC charge for miscellaneous assets is computed as a factor times the book/adjusted carrying value for those assets that are in excess of amounts considered elsewhere in the RBC formula, if any. The RBC charges for each investment are as follows (not less than zero):

- 0.003 times the book value of cash, net cash equivalents and other short-term investments
    - The NAIC recognize that there is a small risk related to the possible insolvency of the bank where cash deposits are held. The 0.3% factor, equivalent to an unaffiliated NAIC 01 bond, reflects the short-term nature of this risk.

- 0.050 times admitted collateral loans and write-ins
    - These are generally a small proportion of total portfolio value. A factor of 5.0% is consistent with other RBC formulas studied by the NAIC working group.

Replication (Synthetic Asset) Transactions and Mandatory Convertible Securities

Assets included within this category are defined in the NAIC RBC instructions as follows:

"A replication (synthetic asset) transaction is a derivative transaction entered into in conjunction with other investments in order to reproduce the investment characteristics of otherwise permissible investments…

A mandatory convertible security is defined as a type of convertible bond that has a required conversion or redemption feature. Either on or before a contractual conversion date, the holder must convert the mandatory convertible security into the underlying common stock. Mandatory convertible securities are subject to special reporting instructions and are therefore not assigned NAIC designations or Unit Prices by the SVO. The balance sheet amount for mandatory convertible securities shall be reported at the lower of amortized cost or fair value during the period prior to conversion… Upon conversion, these securities will be subject to the accounting guidance of the SSAP that reflects their revised characteristics." [147]

[147] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 10.

To expand upon the discussion about derivatives in Chapter 8. The Statutory Income Statement: Income and Changes to Surplus and Chapter 13. Overview of Schedules and their Purpose, insurance companies use derivative transactions for one of three reasons:

1. Hedge or mitigate risk
2. Generate income
3. Replicate an asset that cannot be purchased in the cash market because it is either too expensive or unavailable[148]

As stated previously, derivative holdings by property/casualty insurers are small relative to those held by life insurance companies. This somewhat explains the low-risk charge for this category.

Replication (synthetic asset) transactions are commonly referred to as "RSATs" and are reported in Schedule DB of the Annual Statement. An RSAT is a package of a derivative(s) and a cash instrument(s). The cash instrument is generally a bond.

The RBC charge for RSATs is equal to the RBC factor applicable for the asset the RSAT is replicating, multiplied by the statement value of the transaction from Schedule DB. Credit is given for the RBC charge already applied to the cash instrument. For example, if the cash instrument is a bond, then the cash component of the RSAT is recorded as a bond on the company's balance sheet and has already received a risk charge based on its bond characterization. The RBC for RSATs is adjusted to remove the RBC previously calculated for the subject bond.

A mandatory convertible security is reported in the Annual Statement schedule that corresponds to the security pre-conversion. For example, assume an insurer holds a bond that is mandatorily convertible into a fixed number of shares of common stock within three years. The bond will be reported in the company's balance sheet and will therefore receive an RBC charge based on its NAIC bond class. However, the insurer is not only exposed to risks associated with the bond, but also the risk associated with the common stock that it will convert to sometime over the next three years, since the bond's principal will be used to purchase the shares. The RBC charge for mandatory convertible securities adjusts the RBC charge upward if the security that results from conversion is more risky. Since unaffiliated common stocks have a RBC charge of 0.15, and bonds have a charge between 0.00 and 0.30, depending on class, the RBC charge will be adjusted upward by the maximum of the difference between the RBC charge for the stock and bond, and zero. This is similar to the application of the RBC charge for RSATs; the RBC charge for mandatory convertible securities is equal to

[148] Memorandum to NAIC Investment Risk Based Capital (RBC) Working Group from Walter Givler – Northwestern Mutual Life, Mark Anderson – Met Life and other members of the ACLI Derivative Risk Management Team, dated March 29, 2013, Re: Life Insurer RBC for Derivatives.
http://www.naic.org/documents/committees_e_capad_investment_rbc_wg_exposures_derivatives.pdf.

the RBC charge for the converted security, reduced by the RBC charge for the original security.

Half of the charge for RSATs and mandatory convertible securities is applied to R_1, with the remaining half applied to R_2. This assumes that half of the securities in the calculation are fixed income and half are equity.

Asset Concentration Factor

The asset concentration factor doubles the RBC charge for the 10 largest issuers that the insurance company is exposed to. The purpose of this charge is to reflect the increased risk associated with large concentrations in single issuers.

The 10 largest issuers are determined by first summing the insurer's total investment (book/adjusted carrying value) across all investments (fixed income plus equity) for each issuer. The total amounts for each issuer are then sorted from largest to smallest to determine the top 10. The RBC charge for each fixed income and equity asset is computed for the 10 largest issuers. The resulting RBC charge for fixed income is included as the asset concentration RBC charge within R_1; the resulting RBC charge for equity is included as the asset concentration RBC charge within R_2.[149] The RBC charge is limited to a maximum of 0.300 for each fixed income and/or equity investment.

However, not all assets are subject to the asset concentration factor, as certain assets are deemed to be of low risk or have already received the maximum charge of 0.300. The assets excluded from the additional charge are also excluded in determining the 10 largest issuers.

Fixed income assets that are subject to the asset concentration factor include the following:

- Bonds in classes 02 through 05[150]
- Collateral loans
- Mortgage loans
- Working Capital Finance Investments – NAIC 02
- Low Income Housing Tax Credits

R_2 assets that are subject to the asset concentration factor include the following:

- Unaffiliated preferred stocks and hybrid securities in classes 02 through 05
- Hybrid securities in classes 02 through 05
- Unaffiliated common stock
- Investment in real estate

[149] The asset concentration factor can be computed as the weighted average of the total asset concentration RBC charge with the total subject assets.

[150] Unaffiliated bonds in class 01 are excluded because they are deemed to be of low risk; unaffiliated bonds in class 06 are excluded because they already receive the maximum charge of 0.300.

- Encumbrances on invested real estate
- Schedule BA assets (excluding collateral loans)
- Receivable for securities
- Aggregate write-ins for invested assets
- Derivatives

The following provides a simplified example to illustrate the calculation of the asset concentration factor.

Assume that the fixed income and equity investments made by an insurance company that are subject to the asset concentration factor are limited to 15 issuers and investments in these issuers are limited to the assets listed in the Table 80 below. The following provides the total adjusted book/carrying value of these investments sorted from highest to lowest value by issuer[151].

TABLE 80

Example
Adjusted Book/Carrying Value for Assets Subject to Asset Concentration USD in 000s

		Fixed Income Assets		Equity Assets			
Issuer	Name	Unaffiliated Bonds Class 2 - 5	Collateral Loans	Unaffiliated Preferred Stocks Class 2 - 5	Unaffiliated Common Stock	Investment Real Estate	Total Assets Subject to Asset Concentration
1	Asppill Drug				1,200		1,200
2	Deal Mart		1,000				1,000
3	U.S. Express	1,000					1,000
4	MacroHard Inc.	900					900
5	Dill Computing			900			900
6	Tropical Beverage Co.	820					820
7	Popsi Co.			800			800
8	Texas Oil Inc.	550					550
9	Westwood Resorts		200			35	235
10	Dakota Energy	220					220
11	Bear Pharmaceuticals				200		200
12	Mediapro	200					200
13	Pear Computer				100		100
14	Jane Moose	80					80
15	KO Media				25	50	75
Total		3,770	1,200	1,700	1,525	85	8,280

Only the first ten of these issuers (Asppill Drug through Dakota Energy) are considered in the calculation of the asset concentration factor. The asset concentration charge is computed by

[151] Note, for simplicity, only certain assets were included in the example.

multiplying the RBC charge for each asset class by the associated RBC factor for that class. For simplicity, assume that each of the bond investments is class 02 and each of the preferred stock investments is class 03. Table 81 provides the calculation of the asset concentration RBC charge within R_1 and R_2.

TABLE 81

Example
Calculation of Asset Concentration RBC

Fixed Income Assets	Book/Adjusted Carrying Value	Factor	Additional RBC
Class 2 Unaffiliated Bonds	3,490	0.010	35
Class 3 Unaffiliated Bonds	-	0.020	-
Class 4 Unaffiliated Bonds	-	0.045	-
Class 5 Unaffiliated Bonds	-	0.100	-
Collateral Loans	1,200	0.050	60
Mortgage Loans	-	0.050	-
Subtotal Fixed Income	4,690	0.020	95
Equity Assets	**Book/Adjusted Carrying Value**	**Factor**	**Additional RBC**
Class 2 Unaffiliated Preferred Stock	-	0.010	-
Class 3 Unaffiliated Preferred Stock	1,700	0.020	34
Class 4 Unaffiliated Preferred Stock	-	0.045	-
Class 5 Unaffiliated Preferred Stock	-	0.100	-
Class 2 Unaffiliated Hybrid Securities	-	0.010	-
Class 3 Unaffiliated Hybrid Securities	-	0.020	-
Class 4 Unaffiliated Hybrid Securities	-	0.045	-
Class 5 Unaffiliated Hybrid Securities	-	0.100	-
Unaffiliated Common Stock	1,200	0.150	180
Investment Real Estate	35	0.100	4
Encumbrance on Investment Real Estate	-	0.100	-
Schedule BA Assets	-	0.050	-
Aggregate Write-Ins for Invested Assets	-	0.050	-
Derivatives	-	0.050	-
Receivable for Securities	-	0.025	-
Subtotal Equity	2,935	0.074	218
Grand Total Asset Concentration			312

The asset concentration RBC charge for fixed income investments within R_1 is $94,900 and the asset concentration RBC charge for equity within R_2 is $217,500, resulting in a total asset concentration RBC charge of $312,400.

R_1 for Fictitious

To further illustrate the RBC charges, we used the Annual Statement for Fictitious Insurance Company to build a full example of the NAIC RBC calculations.[152] Because Schedule D is not included in the Annual Statement for Fictitious, we had to make assumptions in preparing the calculation, such as the distribution of fixed assets by RBC class. Table 82 provides the R_1 portion of the RBC calculation for Fictitious.

TABLE 82

R_1 Charge for Fictitious Insurance Company
NAIC Risk-Based Capital 2018

R_1 Calculation – Fixed Income Assets	Amount Held	Charge Factor	RBC Charge
Cash and Cash Equivalents	154,000	0.0030	462
Total Other Short-Term Investments	829,000	0.0030	2,487
Mortgage Bonds	245,000	0.0500	12,250
Net Admitted Collateral Loans	0	0.0500	0
Bonds			
U.S. Government	6,395,684	0.0000	0
Class 01 U.S. Government Agency Bonds	0	0.0030	0
Class 01 Unaffiliated Bonds	46,060,660	0.0030	138,182
Class 02 Unaffiliated Bonds	4,987,460	0.0100	49,875
Class 03 Unaffiliated Bonds	704,112	0.0200	14,082
Class 04 Unaffiliated Bonds	352,056	0.0450	15,843
Class 05 Unaffiliated Bonds	117,352	0.1000	11,735
Class 06 Unaffiliated Bonds	58,676	0.3000	17,603
Subtotal – Bonds subject to bond size factor	58,676,000		247,319
Estimated number of bonds	120		
	Count	Multiplier	Weighting
0 to 50	50	2.50	125
50 to 100	50	1.30	65
100 to 400	20	1.00	20
More than 400	0	0.900	0
Sum (weighted average)	120	1.750	210
Bond size factor RBC	247,319	0.750	185,490
Asset concentration RBC	87,825,000	0.0012	105,390
Total R_1 Charge – Fixed Income Assets Risk			553,398

[152] Note that Fictitious Insurance Company does not have any affiliated entities or miscellaneous off-balance sheet amounts. Therefore, the R_0 charge is zero for Fictitious.

THE RBC CHARGE FOR ASSET RISK ASSOCIATED WITH EQUITY INVESTMENTS (R_2)

R_2 includes the charge for risk associated with equity investments in the following:

1. Affiliated investments
2. Unaffiliated stocks
3. Real estate
4. Schedule BA assets
5. Miscellaneous assets, including receivables for securities, aggregate write-ins for invested assets and derivatives
6. Replication (synthetic asset) transactions and mandatory convertible securities

Typically, investments in unaffiliated stocks and Schedule BA assets, as well as the asset concentration RBC charge, represent most of the risk charge within R_2 for property/casualty insurers.

As discussed for R_0, there is an RBC charge for the ownership of common stock in insurance affiliates which includes an R_2 component – this gets rolled up with the unaffiliated stocks component of the RBC formula. Additionally, for R_1, half of the RBC charge for replication transactions and mandatorily convertible securities listed above as item 6 is applied to R_2.

Similarly, there is the additional charge for asset concentration in the 10 largest issuers for each type of equity investment. The calculation is performed as described within the previous section of this chapter covering the Asset Risk – Fixed Income (R_1) component.

We will continue by providing a brief discussion of the charges for the different types of equity investments (items 1 through 6).

Affiliated investments

The following list includes the different categories of affiliated investments included in R_2, which can be described generally as affiliated entities not subject to RBC (other than alien affiliates):

- Investment affiliates
- Holding companies
- Upstream affiliates (parent)
- Property & Casualty insurance affiliates not subject to RBC
- Life insurance affiliates not subject to RBC
- Health insurance affiliates not subject to RBC
- Other affiliates

The R_2 charge for investments in insurance affiliates not subject to RBC is calculated by multiplying a factor by the book/adjusted carrying value of the common and preferred stock of those affiliates.

Investment Affiliates

According to the NAIC RBC Instructions, "An investment affiliate is an affiliate that exists only to invest the funds of the parent company. The term investment affiliate is strictly defined in the annual statement instructions as any affiliate, other than a holding company, engaged or organized primarily to engage in the ownership and management of investments for the insurer, not including any broker-dealer or a money management fund managing funds other than those of the parent company."[153]

In other words, the RBC charge for an investment affiliate is essentially the same as it would be if the reporting entity held the assets directly. For example, if the reporting entity owned a subsidiary that managed $1 billion of its investments in common stock, then the RBC charge for that entity would be computed based on the $1 billion common stock portfolio. If the charge for these investments would have been $10 million if the reporting entity owned the stock directly, then the charge for the investment affiliate would also be $10 million. If the entity only owned 60% of the investment affiliate, then the RBC charge would be $6 million (= 0.6 * $10 million).

The RBC charge for an investment in an investment affiliate is 0.225 times the carrying value of the common and preferred stock.

Holding Companies

For investment in a holding company, the RBC charge is 0.225 times the holding company value in excess of the carrying value (i.e., holding company value minus carrying value) for indirectly owned insurance affiliates.

Let's use an example to illustrate this calculation. In this example, we will use another fictional company named Reporting Entity Insurance Company (REIC).

Assume REIC purchased 100% of the shares in a holding company called HC Company in 2018. Also assume that HC Company has the following assets on its December 31, 2018, balance sheet, as illustrated in Table 83.

[153] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 5.

TABLE 83

Total assets held by HC Company as of December 31, 2018		
Type of asset	Assets 12/31/2018	Distribution by asset type
U.S. Sub Life Insurance Company	5,000,000	10%
U.S. Sub Property/Casualty Insurance Company	15,000,000	30%
UK Sub Property/Casualty Insurance Company	10,000,000	20%
Common Stock	8,000,000	16%
Preferred Stock	12,000,000	24%
Total assets	50,000,000	100%

U.S. Sub Life Insurance Company, U.S. Sub Property/Casualty Insurance Company and UK Sub Property/Casualty Insurance Company are directly owned by HC Company and indirectly owned by REIC as a result of REIC's ownership of HC.

Recall that book/adjusted carrying value is used in computing the R_0 charge. The carrying value of an indirectly owned insurance subsidiary will depend on the carrying value of the holding company and percentage of the holding company carrying value that the subsidiary represents. Let's continue our example to illustrate.

Assume that REIC carried HC Company on its Annual Statement at year-end 2018 at a value of $55 million, which is equal to the market value of the shares. Of this amount, 10%, or $5.5 million, would represent the carrying value of U.S. Sub Life Insurance Company for purposes of determining the R_0 charge in REIC's RBC calculation. Similarly, $16.5 million (= 0.3 * $55 million) would be the carrying value for U.S. Sub Property/Casualty Insurance Company, and $11 million is the value for the alien insurer, UK Sub Property/Casualty Insurance Company.

If REIC had only purchased, for example, 66% of the shares of HC Company, each carrying value would be adjusted by REIC's ownership interest of 66%. The corresponding values would be $3.63 million, $10.89 million and $7.26 million for the three subsidiaries of HC Company, respectively.

Now back to our discussion of the R_2 charge for investments in holding companies. The RBC charge is 0.225 times the holding company value in excess of the carrying value of indirectly owned insurance affiliates calculated in R_0. In our example, this would be 0.225 times $22 million, where $22 million is derived as in Table 84.

TABLE 84

Reporting Entity Insurance Company (REIC)	Carrying value
HC Company	55,000,000
U.S. Sub Life Insurance Company	5,500,000
U.S. Sub Property/Casualty Insurance Company	16,500,000
UK Sub Property/Casualty Insurance Company	11,000,000
Subtotal, indirectly owned insurance subsidiaries	33,000,000
Holding company minus indirectly owned subs	22,000,000

Upstream Affiliates (i.e., Parent Company)

For bond investments in a parent company, the RBC charge is 0.225 times the carrying value of the common and preferred stock of the parent, regardless of whether the parent is subject to RBC.

Property & Casualty Insurance Affiliates

For P/C insurance affiliates that are not subject to RBC, including title insurers, monoline financial guaranty insurers, and monoline mortgage guaranty insurers, the RBC charge is 0.225 times the book/adjusted carrying value of the common and preferred stock.

Life Insurance Affiliates

For Life insurance affiliates that are not subject to RBC, the RBC charge is 0.225 times the book/adjusted carrying value of the common stock and preferred stock.

Health Insurance Affiliates

For Health insurance affiliates that are not subject to RBC, the RBC charge is 0.225 times the book/adjusted carrying value of the common stock and preferred stock.

Other Affiliates

Non-insurance and insurance affiliates not included elsewhere in this chapter are classified as Other Affiliates. The RBC charge for investments in Other Affiliate is 0.225 times the carrying value of the common and preferred stock.

Unaffiliated Stocks

The RBC charge for unaffiliated preferred stocks and hybrid investments is equal to the book/adjusted carrying value of the asset multiplied by a factor, where the factors vary based on the NAIC class. The classes for preferred stocks and hybrid securities are the same as those for bonds, as are the RBC factors, with the exception that there are no federal government guaranteed preferred stocks:

TABLE 85

NAIC class for preferred stocks and hybrid securities	RBC factor
Class 01 – Highest credit quality	0.003
Class 02 – High credit quality	0.010
Class 03 – Medium credit quality	0.020
Class 04 – Low credit quality	0.045
Class 05 – Lowest credit quality	0.100
Class 06 – In or near default	0.300

The RBC charge for unaffiliated common stocks is computed separately for non-government money market funds and other admitted unaffiliated common stocks. The computation applies a specific factor to the book/adjusted carrying value. The RBC factor for non-government money market funds of 0.003 is equal to that for cash because these investments are considered to be of the same risk level. The factor applied to other common stocks is 0.150.

Real Estate, Schedule BA and Miscellaneous Assets

In general, the RBC charge for real estate investments, other long-term invested assets (as per Schedule BA) and miscellaneous assets are computed as a factor times the book/adjusted carrying value for those assets. The RBC charges for each investment are as follows:

- 0.100 times the book value of real estate (Annual Statement Schedule A assets)
    - According to the NAIC RBC Instructions, encumbrances have been included in the real estate base since the value of the property subject to loss would include encumbrances[154]
- 0.200 times the book value for other long-term invested assets (Annual Statement Schedule BA assets) other than collateral loans
- 0.050 times the book value for aggregate write-ins for invested assets and derivatives
- 0.025 times the book value for receivables for securities

R_2 for Fictitious

Table 86 shows the calculation of R_2 for Fictitious Insurance Company. As with the calculation of R_1 for Fictitious, we had to make several assumptions because only excerpts of Fictitious' Annual Statement are included with this publication. One such assumption that is relevant to the calculation of R_2 is the distribution of stock by RBC class.

[154] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 8.

TABLE 86[155]

R_2 Charge for Fictitious Insurance Company NAIC Risk-Based Capital 2018			
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts			0
Total R_1 Charge – Fixed Income Asset Risk			553,398
R_2 Calculation – Equity Asset Risk	Amount Held	Charge Factor	RBC Charge
Affiliated Investments			
Non-Insurance Affiliated Common Stock	0	0.2250	0
Unaffiliated Preferred Stock			
Class 01 Unaffiliated Preferred Stock	10,880	0.0030	33
Class 02 Unaffiliated Preferred Stock	0	0.0100	0
Class 03 Unaffiliated Preferred Stock	0	0.0200	0
Class 04 Unaffiliated Preferred Stock	23,120	0.0450	1,040
Class 05 Unaffiliated Preferred Stock	0	0.1000	0
Class 06 Unaffiliated Preferred Stock	0	0.3000	0
Unaffiliated Common Stock			
Non-government money market funds	0	0.0030	0
Other admitted unaffiliated common stock	19,340,000	0.1500	2,901,000
Other Long-Term Assets			
Real Estate	3,845,000	0.1000	384,500
Schedule BA Assets Excluding Collateral Loans	4,628,000	0.2000	925,600
Miscellaneous Assets			
Aggregate W/I for Invested Assets	(5,000)	0.0500	0
All Other Invested Assets	79,000	0.0500	3,950
Receivables for Securities	0	0.0250	0
Asset concentration RBC	87,825,000	0.0010	87,825
Total R_2 Charge – Equity Assets Risk			4,303,948

THE RBC CHARGE FOR CREDIT RISK (R_3)

Credit risk reflects counterparty (the entity owing the insurance company money) credit exposure for receivables, including those relating to reinsurance. It contemplates the risk that the counterparty will default (or not pay in whole or in part) and the risk associated with estimating the amounts recorded for counterparty receivables.

R_3 is the charge for credit risk associated with the following:

1. Reinsurance recoverable (reinsurance RBC)
2. Non-invested assets

[155] Note the RBC charge is greater than or equal to 0 as in the case of Aggregate Write-ins (W/I) for Invested Assets in Table 86.

3. Health credit risk

The largest component of R_3 in the industry is the risk associated with uncollectible reinsurance (due both to reinsurers being unable and unwilling to pay). While there is a charge for health credit risk, it is historically zero for most property/casualty companies across the industry.

Reinsurance recoverables

The R_3 charge for reinsurance recoverables reflects the risk that reinsurers cannot or will not pay amounts the reporting entity expects to receive under the terms of its reinsurance contracts.

Over the years there has been considerable focus in the property/casualty industry on reinsurance. For one, uncollectible reinsurance was deemed partly to blame for the failure of Mission Insurance Company and Transit Casualty Company,[156] which helped set RBC in motion for the property/casualty industry. Furthermore, throughout the years, reinsurance has been used in certain situations inappropriately to enhance a company's financial position or hide poor financial results.[157]

From its inception, the RBC formula applied a simple 10% loading to all eligible reinsurance recoverables. Despite the relatively low impact that R_3 has on the industry as a whole, the charge has been subject to criticism from insurance carriers, who have argued that the charge does not differentiate between high and low rated reinsurers, or give credit for those recoverables that are backed by collateral.

From 2018,[158] a new formula was introduced to address these concerns. This new formula is performed at the transaction level and those results are then summed to determine the charge. It applies differentiated risk charges to each reinsurer counterparty based on their credit quality, as indicated by a rating from an approved rating agency, as well as whether or not the recoverables are collateralized.

The charge is calculated within columns 28 through 36 of Schedule F, Part 3, of the Annual Statement. Details of this part of the calculation are described in Chapter 14 covering Schedule F (section titled "Credit Risk on Ceded Reinsurance (columns 21 through 36)"). The

[156] U.S. House of Representatives Subcommittee on Oversight and Investigations of the Committee on Energy and Commerce, Failed Promises-Insurance Company Insolvencies, 101 Cong., 2rid sess., February 1990. Washington, D.C.: GPO, 1993.

[157] Feldblum, S., "NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements," PCAS LXXXIII, 1996, pages 317-319.

[158] Earlier versions of the new formula for the reinsurance recoverables component of R_3 were included for informational purposes only in the RBC filings in 2016 and 2017 while it was under development.

RBC formula uses the total row of the results shown in columns 35 and 36 as inputs to the R_3 risk charge.

Overall, the implementation of this new formula has reduced the level of RBC for reinsurance recoverables by almost a half across the industry.[159]

The RBC charge for reinsurance recoverable is split 50%/50% between R_3 and R_4 in circumstances where the reserve RBC charge (see discussion below) exceeds the sum of the credit risk RBC charge for non-invested assets plus one-half of the RBC charge for reinsurance recoverables. Otherwise, the full amount of the reinsurance recoverable RBC charge is included in R_3. The concept of moving half of the reinsurance recoverable RBC amount to R_4 is to recognize there is some dependency between deterioration in reserves and an increase in exposure to reinsurance credit risk. The limitation on splitting the charge based on the size of the reserve RBC charge is put in place so the insurance company cannot diversify away a portion of its credit risk in situations where the company has limited net reserves.

Non-invested assets

R_3 includes the charge for risk associated with credit exposure resulting from the following non-invested assets listed on the balance sheet:

1. Investment income due and accrued
2. Guaranty funds receivable or on deposit
3. Recoverable from parent, subsidiaries and affiliates
4. Amounts receivable relating to uninsured Accident and Health plans
5. Aggregate write-in for other than invested assets

The RBC charge for these assets is the net admitted value included in column 3 of the asset side of the balance sheet (page 2 of the Annual Statement), each multiplied by a factor of 0.050, with the exception of investment income due and accrued, which receives a factor of 0.010. The factor for investment income due and accrued is equal to the RBC factor applied to unaffiliated class 02 bonds because most of the investment income due and accrued comes from bonds, which are typically the largest holding for a property/casualty insurance company. The receivable assets are generally short-term balances generated in the normal course of doing business. The capital charges for these assets are lower than other long-term recoverables.

Health credit risk

Finally, R_3 also includes a charge for health credit risk for those reporting entities writing 5% or more in accident and health premiums in any of the last three years. This charge considers

[159] NAIC, Summary: Aggregate P/C RBC Results By Year, 2018, http://www.naic.org/documents/research_stats_rbc_results_pc.pdf

the risk associated with transferring health risks (morbidity and mortality) to health care organizations through fixed prepaid amounts (i.e., capitated payments).[160] There is a risk of non-payment in these situations (similar to traditional reinsurance recoverables). Therefore, a charge is applied to reflect the credit risk associated with the portion of capitated payments over and above the security held by the reporting entity for these organizations.

Given that this charge is generally zero for most companies in the property/casualty industry, we will not go into details of the calculation of this charge.

R_3 for Fictitious

Table 87 illustrates the calculation of R_3 for Fictitious.

TABLE 87

R_3 Charge for Fictitious Insurance Company NAIC Risk-Based Capital 2018			
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts			0
Total R_1 Charge – Fixed Income Asset Risk			553,398
Total R_2 Charge – Equity Asset Risk			4,303,948
R_3 Calculation – Credit-Related Assets	Amount Held	Charge Factor	RBC Charge
Total RBC Requirement for Collateralized RI Recoverables (Sch F, Part 3, Col 35)			132,000
Total RBC Requirement for Uncollateralized RI Recoverables (Sch F, Part 3, Col 36)			415,000
Investment Income Due & Accrued	726,000	0.010	7,260
Guaranty Funds Receivable or on Deposit	0	0.050	0
Recoverable from Parent, Subs and Affils	0	0.050	0
Amts Receivable relating to Uninsured A&H Plans	0	0.050	0
Agg. Write-ins for other than Inv. Assets	586,000	0.050	29,300
Health Credit Risk			0
Total			583,560
Half of Reinsurance Recoverables Moved to R_4			273,500
Total R_3 Charge – Credit-Related Asset Risk			310,060

[160] Health care organizations include health maintenance organizations or managed care organizations.

THE RBC CHARGE FOR RESERVE RISK (R_4)

R_4 is very often the largest of the RBC charges for property/casualty insurers. Reserve risk contemplates the risk that a reporting entity's loss and LAE reserves will develop adversely. This charge is calculated separately by line of business using Schedule P data for the last 10 years.

R_4 is the charge for reserve risk associated with the following:

1. Unpaid loss and LAE (reserve RBC)
2. Excessive premium growth
3. Reinsurance recoverable (reinsurance RBC)
4. Accident and Health (A&H) claim reserves (health RBC)

Within the following sections we provide a discussion of each of these categories, with considerable focus on the reserve RBC since this represents the dominant component of the R_4 charge.

Reserve RBC

Reserve RBC is determined by applying a set of factors (called company RBC percent) to the company's net loss and LAE reserves before non-tabular discount. Nominal (undiscounted) reserves are used because consideration for investment income is made by applying the same set of discount factors to all property/casualty insurance companies (called the adjustment for investment income). The use of a common method for considering investment income puts all property/casualty companies on an equivalent basis rather than having differences due to discount rates and payout patterns.

The calculation is performed separately by line of business using the same lines of business as used in Schedule P of the Annual Statement, with the exception that certain lines of business are combined. The occurrence and claims-made categories are combined for other liability and product liability, and reinsurance property and financial lines are combined.

Once the calculation of the base loss and LAE reserve RBC is performed for each line of business, two adjustments are made: one for loss sensitive (e.g., retrospectively rated) contracts and the other for loss concentration. Similar to the asset concentration factor in R_1 and R_2, the loss concentration factor considers diversification in the RBC calculation. Both adjustments result in reductions to the reserve RBC.

We will discuss each component of the calculation, providing examples where applicable.

Base loss and LAE reserve RBC by line of business

The base loss and LAE reserve RBC by line of business is computed as follows:

Equation 1: Base Loss and LAE Reserve RBC

= [[[Company RBC % + 1] * Adjustment for investment income] – 1]
* [Net loss and LAE reserve + Other discounts not in the reserves]

The net loss and LAE reserves used in this calculation are provided in Schedule P, Part 1, column 24, for each line of business. As previously noted, these are gross of non-tabular discount, but net of tabular discount.

Company RBC percentage

The company RBC percentage is the crux of the reserve risk charge. According to the NAIC RBC instructions, "These factors are designed to provide a surplus cushion against adverse reserve development."[161]

For each line of business, the company RBC percentage is determined based on a 50% weighting applied to the straight industry reserve RBC percent and 50% applied to the industry reserve RBC percent adjusted for the company's own experience.

- Industry reserve RBC percent

  The industry reserve RBC percent is a set of factors provided by the NAIC and is the same for all property/casualty insurance companies. There is one factor for each Schedule P line of business. According to the NAIC RBC instructions, these percentages "are based on detailed analysis of historical reserve development patterns found in Parts 2 and 3 of Schedule P for each major line of business."[162] They have been determined in the past by computing the ratio of net incurred loss and defense and cost containment (DCC) development during a particular period from Schedule P, Part 2, to the net loss and DCC reserves as of the earlier period (calculated by subtracting the figures in Schedule P, Part 3 from those in Part 2). The industry percent factor is selected based on the average for all companies within the property/casualty insurance industry, by line of business.

  The industry RBC percent factors are not always updated annually, but rather on an as-needed basis. In fact, the factors in the original RBC model remained for well over 10 years. The only interim change was made to reflect the change in the format of Schedule P, such as when medical malpractice was split into its claims made and occurrence components.

[161] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 21.
[162] Ibid.

The NAIC developed the original factors in 1993 based on an actuarial analysis using data evaluated as of 1991 and prior.[163] This analysis computed the aforementioned ratios of incurred loss and DCC to prior period reserves over each evaluation period provided in Schedule P, Parts 2 and 3 of the 1991 Annual Statement. Nine ratios were computed, the first of which provided development on accident years 1982 and prior over the period December 31, 1982 through December 31, 1991, as a ratio to loss and DCC reserves as of December 31, 1982. The remaining eight ratios were computed measuring development to December 31, 1991, for periods beginning December 31, 1983 through December 31, 1990. The nine ratios were calculated for each line of business by company. An average was computed over all companies for each evaluation period. The industry RBC percent factor for each line of business was set equal to the largest ratio over all of the evaluation dates. This is commonly referred to as the "worst-case year" ratio. The belief is that development of this magnitude could occur in the future because it occurred in the past.[164]

The original factors remained until 2008, when the NAIC adopted changes recommended by the American Academy of Actuaries P/C Risk-Based Capital Committee (Committee) in a report titled An Update to P/C Risk-Based Capital Underwriting Factors: September 2007 Report to the National Association of Insurance Commissioners P/C Risk-Based Capital Working Group. In this study, the Committee recognized that the insurance industry had been through many changes since the original factors were developed, namely changes in the underwriting cycle resulting in shifts in reserve redundancies/deficiencies. Furthermore, despite the formulaic approach of the worst-case year, the Committee found that the original factors could not be easily replicated and varied considerably relative to expectations as to the level of adverse development inherent in a particular line of business. The Committee therefore recommended developing a revised approach that would meet the following criteria:

1. Simple to apply and understand;
2. Responsive to actual history and underlying risk;
3. Easily reproducible by future practitioners;
4. Statistically relevant;

[163] American Academy of Actuaries, "An Update to P/C Risk-Based Capital Underwriting Factors: September 2007 Report to the National Association of Insurance Commissioners P/C Risk-Based Capital Working Group," page 3.
[164] Feldblum, S., "NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements," PCAS LXXXIII, 1996, pages 327-329.

5. Resulting in indications that could be adopted without disruptive swings in required capital for regulated companies."[165]

The revised approach differed from the original approach in four significant ways:

1. The historical data was filtered and screened to remove companies with insufficient or unusual data points. Examples include companies with less than 10 years of experience and/or companies with negative paid, reserve and/or incurred loss and DCC in any one accident year.
2. Rather than selecting the ratio from the worst-case year over the average of all companies, the 87.5 percentile of all data points was used. "The 87.5 percentile was selected because it represents a conservative view of the risk in each line but is also broadly consistent with the existing factors."[166]
3. A floor was set such that the indicated industry reserve RBC percent factor resulted in a minimum charge of 5% after adjustment for investment income.
4. The indicated industry reserve RBC percent factors were capped to limit the change in the base loss and LAE reserve RBC. The Committee recommended a cap of 35%.[167]

For example, the indicated industry reserve RBC factor for private passenger automobile liability that was produced using the revised methodology before capping was 0.128, and the change in the investment income adjustment factor was 0.927. Using Equation 1 (assuming a net loss and LAE reserve balance of $1.00), the implied base loss and LAE reserve RBC is 0.046. As displayed below, this represented a change of -70.5% from the original industry reserve RBC factor of 0.254 with adjustment for investment income of 0.921:

Indicated base loss and LAE reserve RBC based on 2007 methodology before capping:

= [[[0.128 + 1] * 0.927] – 1] *$1.00
= 0.046

Original base loss and LAE reserve RBC:

= [[[0.254 + 1] * 0.921] – 1] *$1.00
= 0.155

Change in base loss and LAE reserve RBC from original to revised (2007) methodology:

[165] American Academy of Actuaries, An Update to P/C Risk-Based Capital Underwriting Factors: September 2007 Report to the National Association of Insurance Commissioners P/C Risk-Based Capital Working Group, pages 2 and 3.
[166] Ibid, page 6.
[167] Ibid, pages 6 and 7.

= 0.046 / 0.155 - 1
= -70.5%

Capped at 35%, the revised methodology produced an industry reserve RBC percent factor of 0.187, which was calculated as follows:

= [[[(-0.350 +1) * 0.155] +1] / 0.927] - 1
= 0.187

To summarize, the industry RBC reserve factor indicated from the revised 2007 methodology was 0.128 before capping and 0.187 after the 35% cap. The 35% cap reduced the impact of the change in methodology from the original factor of 0.254.[168]

The NAIC adopted the factors in 2008 using the revised methodology and indications of the September 2007 report, however with a cap at 15% instead of 35%. The revised factors were applied to RBC calculations for the 2008 reporting year. To continue with the previous example, capping at 15% resulted in an industry RBC reserve percent factor of 0.221, which was calculated as follows:

= [[[(-0.150 +1) * 0.155] +1] / 0.927] - 1
= 0.221[169]

Subsequent changes to the industry reserve RBC percent factors were also made and adopted in 2009 and 2010. The 2009 update applied a 15% cap to the factors adopted in 2008. That is, 2008 factors were substituted in for the "original" factors in the previous calculations, for purposes of capping the impact from the effects of the 2007 revised methodology. This revision was adopted in 2009 and applied to the 2009 reporting year.[170]

Two changes were made in 2010. First, in March 2010, the American Academy of Actuaries P/C Risk-Based Capital Working Group updated the 2007 methodology but with 2008 data. As with the 2007 study, the factors were capped to cause no more than a 15% change to the current factors (2009 updated factors), and the minimum charge was set at 5%.[171] Second, in June 2010, the March 2010 study was updated

[168] Ibid, Appendix II, Exhibit I – III.
[169] American Academy of Actuaries, Update to P/C Risk-Based Capital Underwriting Factors Presented to National Association of Insurance Commissioners P/C Risk-Based Capital Working Group, March 2008.
[170] American Academy of Actuaries, 2009 Update to P/C Risk-Based Capital Underwriting Factors Presented to National Association of Insurance Commissioners' P/C Risk-Based Capital Working Group, December 2008.
[171] American Academy of Actuaries, 2010 Update to P/C Risk-Based Capital Underwriting Factors Presented to the National Association of Insurance Commissioners' Property Risk-Based Capital Working Group, March 2010.

using a 5% cap instead of 15%.[172] The 2010 study capped at 5% was adopted and applied to the 2010 reporting year.

The 2017 RBC formula had a further update to the industry RBC reserve factors, the first since 2010. This update was based on changes recommended by the American Academy of Actuaries P/C Risk-Based Capital Committee in a report titled 2016 Update to Property and Casualty Risk-Based Capital Underwriting Factors.[173] This report proposed a new calibration based on data from Annual Statements 1997-2014 and calculates the 87.5 percentile subject to the following filtering:

- Survivorship – Include data points where, for a particular company and line of business there is no net earned premium in the latest accident year(s).
- Line of business size – Exclude data points where, for a particular line of business, net earned premiums are less than the 15th percentile for that accident year or reserve year.
- Pooling – Combine data points from intercompany pool participants into a single pool-wide data point.
- Minor Lines – Exclude data points where the net earned premium for the line of business represents a small portion of the company's total net earned premium.
- Years of line of business with net earned premium >0 – Exclude data points where, for a particular company and line of business, there is less than five years of net earned premium
- Maturity – Remove the least mature data points.
- Anomalous values – Exclude data points with anomalous values, i.e., negative loss ratios, negative initial reserves and reserve runoff ratios over/under 500%/-500%.

In 2017, the NAIC's Property and Casualty Risk-Based Capital (E) Working Group updated the industry RBC reserve factors in the 2017 RBC formula to the 10% capped level, representing scenario #1 in the report. The factors were due to be re-evaluated again and expected to reach the fully proposed values in the following four years.

In 2018, the NAIC's Property and Casualty Risk-Based Capital (E) Working Group further revised the factors to be included in the 2019 RBC formula by adopting the 35% capped factors (scenario #3) for commercial insurance, medical professional liability and all other lines, while adopting the uncapped factors (scenario #4) for personal and reinsurance lines.

[172] Letter from the American Academy of Actuaries P/C Risk-Based Capital Working Group to the National Association of Insurance Commissioners Capital Adequacy (E) Task Force Re: Risk-Based Capital Underwriting Factors – 2010 Update – Addendum Using 5 Percent Cap, dated June 22, 2010.

[173] https://www.actuary.org/sites/default/files/files/publications/PC_RBC_UWFactors_10282016.pdf

- Company "development factor"

  The reporting entity's own loss experience is considered by adjusting the industry reserve RBC percent by the company "development factor" by line of business. This development factor is calculated as the ratio of the sum of incurred loss and DCC from nine prior accident years evaluated as of the current year to the sum of the initial evaluations of those incurred amounts. The current incurred loss and DCC values come from Schedule P, Part 2, column 10, with the initial values coming from the first incurred value shown for each accident year. The initial values lie along the diagonal. This development factor measures how the initial estimates of ultimate loss and DCC have developed based on what the company currently knows. The factor is capped at 400% to limit the impact of anomalous, one-time results.

  The reporting entity may not rely on its own experience in determining the company RBC percentage if:

  1. Either the initial or current values shown in Schedule P, Part 2, are negative for any year.
  2. The current value is zero for any year.
  3. The sum of the initial values is zero across all years.

Adjustment for investment income

With the exception of workers' compensation tabular reserves, and instances where a company has explicitly requested and received permission from state regulatory authorities to discount non-tabular reserves, insurance companies are required to record loss and LAE reserves on an undiscounted basis under statutory accounting. This creates an inherent margin in surplus. For purposes of determining required capital under the RBC calculation, the reserves are adjusted to remove this margin.[174]

Similar to the industry reserve RBC percent, the investment income factors are provided by the NAIC. According to the NAIC RBC instructions, "This discount factor assumes a 5 percent interest rate. For lines of business other than workers' compensation and the excess reinsurance lines, the payment pattern is determined using an IRS type methodology applied to industry-wide Schedule P data by line of business; otherwise, a curve has been fit to the data to estimate the average payout over time. The discount factor for workers' compensation is adjusted to reflect the tabular portion of the reserves that is already discounted."[175] Tabular discounting is typically permitted only on the indemnity portion of

[174] Feldblum, S., "NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements," PCAS LXXXIII, 1996, page 354.
[175] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 21.

workers' compensation reserves and not to the medical component due to the relatively fast payment of medical expenses.

Similar to the industry reserve RBC percent, the investment income adjustment factors were updated in September 2007 from their original values. An approach similar to the original methodology was followed but applied to updated data through 2005.[176]

Other discounts not included in the reserves

The adjustment for investment income is applied to reflect non-tabular discount. It is applied to loss and LAE reserves on a net of reinsurance basis, net of tabular discount, but before any non-tabular discount, as provided in column 24 of Schedule P, Part 1. If for some reason the amounts included in column 24 are net of non-tabular discount, the amount of the non-tabular discount would need to be added back to the reserves before applying the adjustment for investment income.

These amounts are generally equal to zero; the amount of non-tabular discount is included in columns 32 and 33 of Schedule P, Part 1.

Adjustment for loss-sensitive business

Prior to summing the reserve risk charge over all lines of business written by the reporting company, an adjustment is made to reflect loss-sensitive business.

The loss sensitive adjustment provides a discount for business that is written by the insurance company on contracts for which the premium is determined based on the insured's loss experience (i.e., retrospectively rated contracts). The loss experience is shared in whole or in part with the insured. Therefore, the risk of adverse loss development is also shared with the insured. The insurer needs less surplus to survive this risk of adverse loss development than it does if none of the policies were written on a loss sensitive basis, thereby resulting in a discount to the company's RBC reserve charge to reflect this reduction in risk. This discount is computed separately by line of business.

The following provides the application of the loss-sensitive adjustment:

Equation 2: Loss and LAE RBC after discount
= Equation1 – Loss-sensitive discount
= Base Loss and LAE Reserve RBC – Loss-sensitive discount

Where the loss-sensitive discount
= Loss-sensitive discount factor
* Base loss and LAE RBC (from Equation 1).

[176] American Academy of Actuaries, An Update to P/C Risk-Based Capital Underwriting Factors: September 2007 Report to the National Association of Insurance Commissioners P/C Risk-Based Capital Working Group, page 5.

The loss-sensitive discount factor is 30% for net loss and expense reserves associated with direct loss-sensitive contracts and 15% for net loss and expense reserves associated with assumed loss-sensitive contracts. The difference stems from the potential offset associated with reinsurance contracts for commissions that are loss sensitive as well. Oftentimes such business is written with sliding scale commissions whereby the commission the ceding company receives from the reinsurer is dependent upon the loss ratio on the business; the lower the loss ratio, the higher the commission paid by the reinsurer to the ceding company, subject of course to specified limits. For example, the reinsurer may receive additional premium from the reinsured as losses emerge but in turn have to pay additional commission due to a reduction in loss ratio. As with direct loss-sensitive contracts, the risk of adverse loss development on assumed contracts is reduced; however, it is not reduced by as much due to the potential offset from ceding commissions.

The portion of net loss and expense reserves attributed to direct and assumed loss-sensitive contracts is found in column 3 of Schedule P, Parts 7A and 7B, respectively.

Adjustment for loss concentration

The loss concentration adjustment is applied to the sum of the RBC reserve charges for all lines of business and reflects diversification across the lines. The theory underlying this discount is that the reserves for each line of business written by an insurance company would not be expected to develop adversely or favorably at the same time, assuming such development is random.

The final net loss and LAE RBC charge is computed as follows:

Equation 3: Net loss and LAE RBC

= Total loss and LAE RBC after discount for all RBC lines * 1,000
* Loss concentration factor

Where the loss concentration factor

$$= \frac{\text{Net loss and LAE for the largest line} * 0.300}{\text{Net loss and LAE for all lines combined}} + 0.700$$

The loss concentration factor is determined by taking the percentage of total net loss and LAE reserves for the largest line of business to the total net loss and LAE for all RBC lines combined, multiplying this percentage by 0.300 and then adding the result to 0.700.[177]

Because all adverse loss development may not always be a random fluctuation in losses, such as when the company increases loss reserves to improve its earnings position, adverse

[177] For clarity, largest line is determined based on the Schedule P line of business having the highest amount of net loss and LAE reserves as of the filing date. Note, despite being separate lines of business within Schedule P, claims-made and occurrence business are combined for purposes of this calculation for other liability and product liability.

development across lines may not be totally independent. This formula recognizes that there may be some interdependence between lines of business.

A monoline writer would not receive any discount, as the calculation would be 1.000 * 0.300 + 0.700, which produces a loss concentration factor of 1.000. However, a company writing 60% of its business in its largest line would receive a discount to its reserve risk charge of 12%, or a loss concentration factor of 0.880 (= 0.600 * 0.300 + 0.700).

Illustration of reserve RBC calculation

The following provides an illustration of the reserve RBC calculation for REIC. Assume REIC writes only four lines of business: homeowners/farmowners (HO/FO), private passenger automobile liability (PPAL), workers' compensation (WC) and other liability (OL). The source of the company's own data is Schedule P, which is provided in thousands of U.S. dollars.

TABLE 88

Reporting Entity Insurance Company (REIC)							
Given the following data:		HO/FO	PPAL	WC	OL	Total All Lines	Source
(1)	Industry Average Loss & LAE Development Ratio	0.989	1.022	0.952	0.966		Provided by NAIC
(2)	Company Average Loss & LAE Dvpt Ratio for prior 9 years	1.070	1.100	1.125	1.150		Company Schedule P, Part 2
(3)	Industry Loss & LAE RBC %	0.213	0.181	0.336	0.531		Provided by NAIC
(4)	Adjustment for Investment Income	0.938	0.928	0.830	0.852		Provided by NAIC
(5)	Company Net Loss & LAE Unpaid, gross of non-tabular discount	10,000	8,000	17,000	12,000	47,000	Company Schedule P, Part 1
(6)	Other Discount Amount Not Included in Unpaid Loss & LAE	–	–	–	–	–	Company data
(7)	Portion of Reserves on Retro-Rated Plans:						
	(a) % Direct Loss Sensitive	0.0%	0.0%	20.0%	0.0%		Company Schedule P, Part 7A, Col 3
	(b) % Assumed Loss Sensitive	0.0%	0.0%	0.0%	0.0%		Company Schedule P, Part 7B, Col 3
Calculation of Reserve RBC		HO/FO	PPAL	WC	OL	Total All Lines	
Step 1: Base Loss & LAE Reserve RBC							
(8)	Ratio of Company Average Development Ratio to Industry	1.082	1.076	1.182	1.190		= (2) / (1)
(9)	Company Loss & LAE RBC %	0.222	0.188	0.367	0.582		= 50% of (3) + 50% of (8)*(3)
(10)	Base Loss & LAE Reserve RBC Charge	1,460	819	2,282	4,170		={ [((9)+1) * (4)] - 1 } * { (5) + (6) }
Step 2: Loss & LAE RBC After Discount							
(11)	Loss-sensitive Factor	–	–	0.060	–		= 30% of (7a) + 15% of (7b)
(12)	Loss-sensitive Discount	–	–	137	–		= (11) * (10)
(13)	Loss & LAE RBC After Discount	1,460	819	2,145	4,170	8,594	= (10) - (12)
Step 3: Net Loss & LAE RBC * 1,000							
(14)	Distribution of Loss & LAE Reserves by Line	21%	17%	36%	26%		= (5) by line / (5) total
(15)	Loss Concentration Factor					0.809	= 0.300 * Max of (14) + 0.700
(16)	Net Loss & LAE RBC * 1,000					6,948,010	= (13) * (15) * 1,000

As displayed in Table 88, the reserve RBC included in the R_4 charge for REIC is $6,948,010. The main driver of the reserve RBC is the company RBC percentage for loss and LAE reserve risk. This percentage is higher than the industry RBC percent in line 3 because REIC's ultimate estimates tend to develop adversely, as evidenced by the ratios of company development to industry development in excess of 1.000 in line 8 above.

Table 89 provides another example of the detailed R_4 calculation for the commercial automobile liability (CAL) line of business for Fictitious Insurance Company. This calculation

uses the financial statements and Schedule P line detail found in other examples within this publication.

TABLE 89

R_4 Charge for Commercial Automobile Liability (CAL) Fictitious Insurance Company NAIC Risk-Based Capital 2018	
R_4 – Reserve Risk	CAL
Industry Average Development	1.060
Company Average Development	0.901
Company Average Development / Industry Average Development	0.850
Industry Loss & LAE RBC %	0.243
Company RBC %	0.225
Loss & LAE Unpaid	3,450,000
Adjustment for Investment Income	0.911
Loss & LAE Reserve RBC Before Discounts	399,565
Percent Loss-sensitive Direct Loss and Expense Reserves	0.011
Loss-sensitive Direct Loss and Expense Reserve Discount Factor	0.300
Loss-sensitive Discount for Loss and Expense Reserves	1,319
Loss and LAE Reserve RBC	398,247

Excessive premium growth

The estimation of unpaid loss and LAE reserves is subject to greater uncertainty for companies that are growing rapidly. The reasons are twofold. First, an insurance company does not have as much insight into new business as it does into risks that are currently on the books. Second, the estimation of unpaid claims is more difficult for a growing company rather than a company in a steady state. Consider a company that decides to grow its writings by 20% over the course of a year. As a company grows throughout the year, the average writings are more heavily skewed toward the second half of the policy year. Without explicit consideration for this shift, traditional actuarial projection techniques will not adequately capture the lag in loss emergence and therefore will understate the reserve need. However, the difficulty is in determining how exactly to consider this shift.

In the RBC calculation, excessive growth is defined as a three-year average growth rate in gross written premiums that is in excess of 10%. A growth rate of 10% is deemed to be a normal annual increase in premium volume. The growth rate for any single year is capped at 40%. The excess percentage (excess of 10%) is called the RBC average growth rate factor.

Average growth rate factor
= Maximum (average gross premium growth over three years, 0.10) – 0.10

For purposes of this calculation, gross written premiums are equal to direct written premiums from line 35 of column 1 of the Underwriting and Investment Exhibit (U&IE), plus assumed premiums from non-affiliates in column 3. To perform this calculation, Part 1 of the U&IE is

required for each of the past four years. The calculation is performed using as many years as possible, but no more than four; if the company only has one year of experience, only one year is used. However, if the company is a start-up, a growth rate of 40% is used. If a company has no gross written premium in the current year, it is assumed not to be growing, and a growth rate of zero is used.

This calculation is performed on a group basis, for those companies that are part of a group. Therefore, each member of the group will have the same RBC average growth rate factor. The group basis is used to neither punish nor reward individual legal entities that might be growing due to a realignment of business from one company within the group to another. In this case, the growth is not attributed to new business but rather a transfer or risks from one company to the other.

In addition, business acquired or divested as a "shell" is included in the calculation of the growth rate only to the extent that the liabilities are retained by the reporting entity. Servicing carriers for assigned risk pools can also exclude the written premiums associated with the involuntary pool, as the insurer has little or no control over the assignment of such risk.

The RBC average growth rate factor is multiplied by 0.450 of the net loss and LAE reserves as per the total line in Schedule P, Part 1, Summary, column 24.

Excessive premium growth charge for loss and LAE reserves =

RBC average growth rate factor * 0.450 * net loss and LAE reserves

The 0.450 has remained unchanged since the original RBC formula for property/casualty insurers was implemented. It was determined by a member of the American Academy of Actuaries RBC Task Force (Mr. Allan Kaufman) after studying the average development in net loss and LAE reserves experienced by companies that experienced growth in excess of 10%, relative to development observed by the remainder of the industry.[178] The 0.450 is already adjusted for discount using a factor of 0.900, which was what Kaufman approximated to be the average discount factor for all lines of business.[179]

Reinsurance RBC

Recall from our discussion of the R_3 charge that reinsurance RBC represents the minimum amount of capital included in the RBC formula that would be needed to survive the risk of reinsurer default.

[178] Feldblum, S., "NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements," PCAS LXXXIII, 1996, page 354.
[179] Ibid.

The reinsurance RBC within R_4 is equal to the other half of the reinsurance recoverable amount computed in R_3 unless the reserve RBC is less than the RBC for non-invested assets plus one-half of the RBC for reinsurance recoverables. If this is the case, the entire reinsurance RBC charge is included in R_3 and the reinsurance RBC within R_4 is zero. The reserve RBC limitation was put in place so the insurance company cannot diversify away a portion of its credit risk in situations where the company has limited net reserves.

Health RBC

In addition to the charge for property/casualty lines of business, a separate health RBC calculation is required for those property/casualty insurers that have written 5% or more in accident and health premiums in any of the past three years. We will not go into the details of this formula but note that the health RBC calculation is based on the RBC formula for life insurance.

R_4 for Fictitious

Table 90 provides the R_4 calculation for Fictitious.

TABLE 90

R_4 Charge for Fictitious Insurance Company NAIC Risk-Based Capital 2018					
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts					0
Total R_1 Charge – Fixed Income Asset Risk					553,398
Total R_2 Charge – Equity Asset Risk					4,303,948
Total R_3 Charge – Credit-Related Asset Risk					310,060
R_4 Calculation – Underwriting Risk – Reserves	Amount Held	Charge Factor	Initial RBC Charge	Loss-sensitive Discount[180]	Final RBC Charge
Property/Casualty business					
Loss and LAE reserves – HO/FO	1,455,000	0.1237	179,984	0	179,984
Loss and LAE reserves – PPAL	2,482,000	0.1136	281,955	0	281,955
Loss and LAE reserves – CAL	3,450,000	0.1158	399,565	1,319	398,247
Loss and LAE reserves – WC	15,946,000	0.1122	1,789,141	66,019	1,723,122
Loss and LAE reserves – CMP	4,782,000	0.3087	1,476,203	0	1,476,203
Loss and LAE reserves – Med Mal Occurrence	0	0.0000	0	0	0
Loss and LAE reserves – Med Mal CM	0	0.0000	0	0	0
Loss and LAE reserves – Spec Liab	0	0.0000	0	0	0
Loss and LAE reserves – OL	20,691,000	0.3095	6,403,865	9,607	6,394,258
Loss and LAE reserves – Spec Prop	1,624,000	0.1740	282,576	0	282,576
Loss and LAE reserves – APD	310,000	0.0873	27,063	0	27,063
Loss and LAE reserves – F&S	817,000	0.2530	206,701	0	206,701
Loss and LAE reserves – Other	0	0.0000	0	0	0
Loss and LAE reserves – Products Liability	0	0.0000	0	0	0
Loss and LAE reserves – All Other					
Total	51,557,000		11,047,053	76,945	10,970,109
Company loss concentration factor		0.8204			
Loss reserve RBC after loss concentration					8,999,842
Current year growth		0.0195			
1st prior year growth		-0.0486			
2nd prior year growth		-0.0550			
Selected Average Growth		0.0000			
RBC average growth rate		0.0000			
Excessive growth charge on loss and LAE reserves	51,557,000	0.0000			0
Half of Reinsurance RBC					273,500
Total R_4 Charge – Underwriting Risk – Reserves					9,273,342

[180] We have assumed that the percentage of Fictitious' net loss and expense reserves that emanates from loss-sensitive contracts written on a direct basis is: 1.10% for commercial automobile liability, 12.3% for workers' compensation, 0.5% for other liability, and 0% for all other lines and for loss-sensitive contracts written on an assumed basis.

THE RBC CHARGE FOR WRITTEN PREMIUM RISK (R_5)

The R_5 charge considers underwriting risk associated with the following:

1. Net written premium (written premium RBC)
2. Excessive premium growth
3. Health premium (health premium RBC)
4. Health stabilization

For a typical company, almost all of the R_5 charge will come from the written premium RBC component.

The following provides a brief discussion of each of the first two categories of the R_5 risk charge. As previously noted in the discussion on R_4, we will not go into details for health insurance categories because the charges for health premium RBC and health stabilization are generally immaterial to the property/casualty industry.

Written premium RBC

Written premium risk contemplates the risk that future business written by the company will be unprofitable. Ideally, the charge for this risk should be based on business written in the following year, but since that is an unknown quantity, business written during the current year is used as a proxy. Similar to the reserve RBC, the written premium RBC is computed by applying a set of factors, varying by line of business, to the net of reinsurance premiums written by the company during the current year. The calculation is done on the same lines of business as the reserve RBC with a different set of factors used in the calculation.

As with the reserve RBC, once the calculation of the base net written premium RBC is calculated for each line of business, two reductions are made: one for loss-sensitive business and the other for premium concentration (as opposed to loss concentration in R_4). Premium concentration reflects diversification in writing business across different lines of business.

Because the mechanics generally follow those used in the reserve RBC charge, we will only discuss differences in the calculation for written premium RBC.

Base net written premium RBC by line of business

The base net written premium RBC by line of business is computed as follows:

Equation 4: Base net written premium RBC

= Net written premium for the current calendar year
  * [[Company RBC loss and LAE ratio * Adjustment for investment income] + Underwriting expense ratio - 1.000]

The net written premiums for each line of business are provided in column 6 of Part 1B of the U&IE within the Annual Statement. Aggregate write-ins for other lines of business are included within the other liability line of business.

Company RBC loss and LAE ratio

Similar to how the company RBC percentage is the key driver in the reserve RBC calculation, the company RBC loss and LAE ratio forms the crux of the written premium risk charge. For each line of business, the company RBC loss and LAE ratio is determined based on a 50% weighting applied to the straight industry RBC loss and LAE ratio and 50% applied to the industry RBC loss and LAE ratio adjusted for the company's own experience. The industry RBC loss and LAE ratio is given by the NAIC and is the same for all property/casualty insurance companies.

As with the industry reserve RBC percent, the industry RBC loss and LAE ratios did not change from their original value until 2008, when the NAIC adopted changes that were recommended by the American Academy of Actuaries P/C Risk-Based Capital Committee.[181] The original industry RBC loss and LAE ratios were based on the "worst-case" accident year ratio by line of business that resulted from taking a simple average over all companies. Company loss and LAE ratios by accident year were taken from what is currently column 31 of Schedule P, Part 1. The revised methodology recommended by the Committee instead uses the 87.5 percentile of all data points. Consistent with the industry reserve RBC percent factor, a floor was set such that the indicated industry RBC loss and LAE ratio resulted in a minimum charge of 5% after adjustment for investment income. In addition, the indicated industry RBC loss and LAE ratios were capped to limit the change in the base loss and LAE reserve RBC. The data was also filtered and screened to remove anomalous values (e.g., companies having less than an average of $500,000 in earned premium or a loss ratio of 0% for any one year). Further, loss ratios were capped at 300%.[182]

As discussed in the reserve RBC section above, the 2017 RBC formula saw another update to the industry RBC loss and LAE ratio factors, the first since 2010. This update was based on changes recommended by the American Academy of Actuaries P/C Risk-Based Capital Committee in a report titled 2016 update to Property and Casualty Risk-Based Capital Underwriting Factors.[183] The recommendations from this study are the same for written premium RBC as those discussed above for reserve RBC. As with the industry RBC reserve factors, the NAIC adopted the industry RBC loss and LAE ratio factors capped at 10% in the

[181] Note, however, changes were made to reflect structural changes to Schedule P over the time period, such as the separation of medical malpractice into its occurrence and claims-made components.
[182] American Academy of Actuaries, An Update to P/C Risk-Based Capital Underwriting Factors: September 2007 Report to the National Association of Insurance Commissioners P/C Risk-Based Capital Working Group, pages 2 and 5.
[183] https://www.actuary.org/sites/default/files/files/publications/PC_RBC_UWFactors_10282016.pdf

2017 formula, with further revisions to the 2019 formula to use the factors capped at 35% for all lines of business other than personal and reinsurance lines which are uncapped.

The reporting entity's own experience is considered by adjusting the industry loss and LAE ratios by the ratio of the company average loss and LAE ratio to the industry average loss and LAE ratio. The company average loss and LAE ratio is a straight average over the past 10 accident years of the net loss and LAE ratios provided in Schedule P, Part 1, column 31. Loss and LAE ratios for any accident year in excess of 300% are capped at that value in consideration of anomalous, one-time results.

Note that the reporting entity may not rely on its own experience in determining the company RBC loss and LAE ratio if:

1. The loss and LAE ratio for any accident year is zero or negative.
2. The net earned premium for any accident year is zero or negative.
3. More than two years' net earned premiums are less than 20% of the average over all years for each line (otherwise the company must exclude the one or two specific years that fail and take a straight average from the remaining years).

Adjustment for investment income

The investment income factors are provided by the NAIC and calculated using the same assumptions as in the reserve RBC, with the exception that discounted years differ because written premium is discounted as opposed to reserves.

Underwriting expense ratio

This is the company's own underwriting expense ratio for the current year capped at 400%, with a floor of zero. It is equal to the ratio of other underwriting expenses incurred in the current year per line 4 of the income statement, divided by total net written premium for the current year from Part 1B, column 6 of the U&IE.

Underwriting expense ratio =
Other underwriting expenses /
Net written premium

Adjustment for loss-sensitive business

Prior to summing the written premium RBC over all lines of business written by the reporting company, an adjustment is made to reflect loss-sensitive business. The following provides the application of the loss-sensitive adjustment:

Equation 5: Net written premium RBC after discount
= Equation 4
- Loss-sensitive discount

= Base net written premium RBC
- Loss-sensitive discount.

Similar to the reserve RBC, a 30% discount is applied to the portion of the net written premium RBC charge that is attributed to direct loss-sensitive contracts, and a 15% discount is applied to the base net written premium RBC charge for assumed contracts. The portion of net written premium attributed to direct and assumed loss sensitive contracts is found in column 6 of Schedule P, Parts 7A and 7B, respectively.

Adjustment for premium concentration

The final written premium RBC charge is computed as follows:

Equation 6: Net written premium RBC charge
= Equation 5
* Premium concentration factor
= Total net written premium RBC after discount
* Premium concentration factor

The premium concentration factor is determined by taking the percentage of total net written premiums that the largest line of business represents, multiplying this percentage by 0.300 and then adding the result to 0.700. As with the loss concentration factor, a monoline writer would not receive any discount, as the calculation would be 1.000 * 0.300 + 0.700, which produces a premium concentration factor of 1.000. However, a company writing 60% of its business in its largest line would receive a discount to its net written premium RBC charge of 12%, or a premium concentration factor of 0.880 (= 0.600 * 0.300 + 0.700).

Illustration of written premium RBC calculation

Table 91 shows the written premium RBC calculation for REIC used in our illustration of Reserve RBC. The source of the company's net written premium data is Part 1B of the U&IE, which is provided in U.S. dollars.

TABLE 91

Reporting Entity Insurance Company (REIC)							
Given the following data:		HO/FO	PPAL	WC	OL	Total All Lines	Source
(1)	Industry Average Loss & LAE Ratio	0.687	0.806	0.744	0.633		Provided by NAIC
(2)	Company Average Loss & LAE Ratio for past 10 years	0.634	0.724	0.811	0.975		Company Schedule P, Part 1
(3)	Industry Loss & LAE Ratio	0.927	0.969	1.044	1.027		Provided by NAIC
(4)	Adjustment for Investment Income	0.954	0.925	0.839	0.816		Provided by NAIC
(5)	Company Current Year Net Written Premium	8,500,000	7,000,000	6,200,000	5,300,000	27,000,000	Company U/W & Inv Ex, Part 1B, Col 6
(6)	Company Underwriting Expense Ratio	0.271	0.271	0.271	0.271		Company Inc Stmt Line 4 divided by U/W & Inv Ex, Part 1B, Col 6
(7)	Portion of WP on Retro-Rated Plans:						
	(a) % Direct Loss Sensitive	0.0%	0.0%	13.0%	0.0%		Company Schedule P, Part 7A, Col 6
	(b) % Assumed Loss Sensitive	0.0%	0.0%	0.0%	0.0%		Company Schedule P, Part 7B, Col 6
Calculation of Written Premium RBC:		HO/FO	PPAL	WC	OL	Total All Lines	
Step 1: Base Written Premium RBC							
(8)	Ratio of Company Average Loss & LAE Ratio to Industry	0.923	0.898	1.090	1.540		= (2) / (1)
(9)	Company Loss & LAE Ratio	0.891	0.920	1.091	1.304		= 50% of (3) + 50% of (8)*(3)
(10)	Base Loss & LAE WP RBC Charge	1,030,584	852,112	1,155,406	1,777,725		= (5) * { [(9) * (4)] + (6) - 1 }
Step 2: Net Written Premium RBC After Discount							
(11)	Loss-sensitive Factor	–	–	0.039	–		= 30% of (7a) + 15% of (7b)
(12)	Loss-sensitive Discount	–	–	45,061	–		= (11) * (10)
(13)	Net Written Premium RBC After Discount	1,030,584	852,112	1,110,345	1,777,725	4,770,766	= (10) - (12)
Step 3: Net Written Premium RBC							
(14)	Distribution of WP by Line	31%	26%	23%	20%		= (5) by line / (5) total
(15)	Premium Concentration Factor					0.794	= 0.300 * Max of (14) +0.700
(16)	Net Written Premium RBC					3,790,109	= (13) * (15)

As displayed in Table 91, the written premium RBC that is included in the R_5 charge for REIC is $3,790,109. The company average loss and LAE ratio for the past 10 years (line 2) is better than the industry average loss and LAE ratio (line 1) for the personal lines (HO/FO and

PPAL) and worse for the commercial lines (WC and OL). Thus, the company loss and LAE ratio in line 9 is lower than the industry ratio in line 3 for the personal lines and higher for the commercial lines. In fact, the ratio is substantially higher for OL given the poor average loss ratio over the past 10 years, which is causing a higher overall written premium RBC for OL than the other three lines of business, despite the fact that the premium writings are the lowest for OL.

Table 92 provides another example of the R_5 calculation for CAL for Fictitious.

TABLE 92

R_5 Charge for Commercial Automobile Liability (CAL) Fictitious Insurance Company NAIC Risk-Based Capital 2018	
R_5 – Written Premium Risk	
Industry Average Loss and Loss Expense Ratio	0.724
Company Average Loss and Loss Expense Ratio	0.618
Company Average Loss Ratio/Industry Loss Ratio	0.854
Industry Loss & LAE Ratio	1.005
Company RBC Loss & LAE Ratio	0.931
Company Underwriting Expense Ratio	0.317
Net Written Premium	2,250,000
Adjustment for Investment Income	0.890
Net Written Premium RBC Before Discounts	328,438
Percent Loss-sensitive Direct NPW	0.008
Loss-sensitive Direct NPW Discount Factor	0.300
Loss-sensitive Discount for Direct NPW	788
Total NPW RBC	327,649

Excessive premium growth

The RBC average growth rate factor is calculated the same as that for reserve risk. However, the factor differs in its application. In the case of R_5, the excessive premium growth charge is applied to net written premium rather than reserves and multiplied by 0.225, rather than 0.450. The net written premium is obtained from the total line in Part 1B, column 6, of the U&IE. The factor of 0.225 was determined by Kaufman based on a study of the loss ratio for companies experiencing growth in excess of 10% versus all companies in the industry. As with the 0.450 factor, the factor applied to net written premium of 0.225 has been adjusted for discounting by 0.900.

R_5 for Fictitious

Table 93 provides the R_5 portion of the calculation for Fictitious.

TABLE 93

R_5 Charge for Fictitious Insurance Company
NAIC Risk-Based Capital 2018

Fictitious Insurance Company					
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts					0
Total R_1 Charge – Fixed Income Asset Risk					553,398
Total R_2 Charge – Equity Asset Risk					4,303,948
Total R_3 Charge – Credit-Related Asset Risk					310,060
Total R_4 Charge – Underwriting Risk--Reserves					9,273,342
R_5 Calculation – Underwriting Risk – Net Written Premium	Amount Written	Charge Factor	Initial RBC Charge	Loss-sensitive Discount[184]	Final RBC Charge
Property/Casualty business					
Net Written Premium – HO / FO	4,555,000	0.1441	656,376	0	656,376
Net Written Premium – PPAL	2,804,000	0.2115	593,046	0	593,046
Net Written Premium – CAL	2,250,000	0.1460	328,438	788	327,649
Net Written Premium – WC	4,022,000	0.2030	816,466	13,471	802,995
Net Written Premium – CMP	4,677,000	0.1709	799,299	0	799,299
Net Written Premium – Med Mal Occurrence	0	0.0000	0	0	0
Net Written Premium – Med Mal CM	0	0.0000	0	0	0
Net Written Premium – Spec Liab	0	0.0000	0	0	0
Net Written Premium – OL	3,502,000	0.1999	700,050	630	699,420
Net Written Premium – Spec Prop	2,484,000	0.1805	448,362	0	448,362
Net Written Premium – APD	2,312,000	0.1715	396,508	0	396,508
Net Written Premium – F&S	146,000	0.1830	26,718	0	26,718
Net Written Premium – Other	0	0.0000	0	0	0
Net Written Premium – Products Liability	0	0.0000	0	0	0
Net Written Premium – All Other	0	0.0000	0	0	0
Total	26,752,000		4,765,262	14,889	4,750,373
Company premium concentration factor		0.7524			
Written Premium RBC after premium concentration					3,574,411
Excessive growth charge on net written premium	26,752,000	0.0000			0
Total R_5 Charge – Underwriting Risk – Net Written Premium					3,574,411

THE RBC CHARGE FOR CATASTROPHE RISK (R_{cat})

The R_{cat} risk charge considers catastrophe risk associated with earthquakes and hurricanes. This risk applies on a net of reinsurance basis with a corresponding contingent credit risk charge for certain categories of reinsurers.

The insurance company may use the modeled losses from any one of the NAIC-approved commercially available third party vendor catastrophe models, or any combination of losses

[184] We have assumed that the percentage of Fictitious' net written premium that emanates from loss-sensitive contracts written on a direct basis is: 0.8% for commercial automobile liability, 5.5% for workers' compensation, 0.3% for other liability, and 0% for all other lines and for loss-sensitive contracts written on an assumed basis.

from two or more of the models, using the insurer's own insured property exposure information as inputs to the model. For the 2018 RBC formula, approved vendor models are available from AIR, EQECAT, RMS, ARA HurLoss Model (hurricane only) and the Florida Public Model (hurricane only). For the 2019 RBC formula, companies will also be able to use their own internally developed catastrophe model or those that are the result of adjustments made by the insurer to vendor models to represent their own view of catastrophe risk, upon applying for and obtaining written permission by their domestic (where model output is used for a single entity) or lead state (where model output is used for the whole group) insurance regulator.

The company must provide modeled loss scenarios for the worst year in 50, 100, 250 and 500; however, only the worst year in 100 will be used in calculating the catastrophe risk charge. Insurers are expected to use the same exposure data, modeling, and assumptions that they use in their own internal catastrophe risk management process, rather than a prescribed set of modeling assumptions. While it is preferred that the projected modeled losses are reported on an Aggregate Exceedance Probability (AEP) basis, companies are permitted to report on an Occurrence Exceedance Probability (OEP) basis if that is consistent with the company's internal risk management process.

For both earthquakes and hurricanes, a risk charge factor of 1.000 is applied to the net of reinsurance losses (excluding any loss adjustment expenses) at the worst year in 100 level. Additionally, a factor of 0.048 is applied to the modeled losses ceded under any reinsurance contract associated with this level of net loss to capture the contingent credit risk associated with the potential default of reinsurers in this scenario. Recoveries from certain categories of reinsurers are exempt from this charge, namely U.S. affiliates and mandatory pools (whether authorized, unauthorized or certified).

The total R_{cat} catastrophe risk charge is calculated using the "sum of squares" approach, which assumes the two risks are independent, using the following formula:

$$R_{cat} = \sqrt{(Total\ earthquake\ risk)^2 + (Total\ hurricane\ risk)^2}$$

Exemption Interrogatory

Insurers may qualify for an exemption from filing either or both of the components of the catastrophe risk charge if they meet certain criteria, upon completion of an interrogatory.

For both earthquake and hurricane exemptions, the company must indicate under which criteria below it is claiming an exemption:

1. The company has not entered into a reinsurance agreement covering earthquake / hurricane exposure with a non-affiliate or a non-U.S. affiliate, and either

a. The company participates in an inter-company pooling arrangement with 0% participation, leaving no net exposure for earthquake / hurricane risks; or
b. The company cedes 100% of its earthquake / hurricane exposures to its U.S. affiliate(s), leaving no net exposure for earthquake / hurricane risks

2. The company's ratio of Insured Value – Property to surplus as regards policyholders is less than 50%
3. The company has written Insured Value – Property that includes earthquake / hurricane coverage in the Catastrophe-Prone Areas representing less than 10% of its surplus as regards policyholders

The NAIC RBC Instructions include the following definitions related to the catastrophe risk exemptions[185]:

Insured-Value Property	Includes aggregate policy limits for structures and contents for policies written and assumed in the following annual statements lines – Fire, Allied Lines, Earthquake, Farmowners, Homeowners, and Commercial Multi-Peril.
Catastrophe-Prone Areas in the U.S.:	
- Earthquake risks	Includes any of the following states or commonwealths: Alaska, Hawaii, Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Puerto Rico, and geographic areas in the following states that are in the New Madrid Seismic Zone – Missouri, Arkansas, Mississippi, Tennessee, Illinois, and Kentucky.
- Hurricane risks	Includes Hawaii, District of Columbia, and states and commonwealths bordering on the Atlantic Ocean, and/or Gulf of Mexico including Puerto Rico.

For the earthquake exemption, if a company qualifies for exemption under criteria 3, the company must provide details about how the "geographic areas in the New Madrid Seismic Zone" were determined, with the following additional questions:

a. What resource was used to define the New Madrid Seismic Zone?
b. Was exposure determined based on zip codes or countries in the zone, was it based on all of the earthquake exposure in the identified states, or was another methodology used? Describe any other methodology used.

[185] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 43.

R_{cat} for Fictitious

Table 94 provides the R_{cat} – Earthquake Catastrophe Risk portion of the calculation for Fictitious.

TABLE 94

R_{cat} Earthquake Charge for Fictitious Insurance Company
NAIC Risk-Based Capital 2018

R_{cat} - Earthquake Catastrophe Risk

	Modeled Losses (USD in 000s)			
Earthquake	Direct & Assumed	Net	Ceded Amounts Recoverable	Ceded Amounts Recoverable with zero Credit Risk Charge
Worst Year in 50	70,000	50,000	20,000	-
Worst Year in 100	105,000	75,000	30,000	-
Worst Year in 250	120,000	80,000	40,000	-
Worst Year in 500	135,000	80,000	55,000	-

Has the company reported above, its modeled earthquake losses using an Occurrence Exceedance Probability (OEP) basis? Yes

	Amount	Factor	RBC Requirement
Net Earthquake Risk	75,000	1.000	75,000
Contingent Credit Risk for Earthquake Risk	30,000	0.048	1,440
Total Earthquake Catastrophe Risk (AEP basis)	0	1.000	0
Total Earthquake Catastrophe Risk (OEP basis)	76,440	1.000	76,440
Total Earthquake Catastrophe Risk			76,440

Table 95 provides the R_{cat} – Hurricane Catastrophe Risk portion of the calculation for Fictitious.

TABLE 95

R_{cat} Hurricane Charge for Fictitious Insurance Company
NAIC Risk-Based Capital 2018

R_{cat} - Hurricane Catastrophe Risk

	Modeled Losses (USD in 000s)			
Hurricane	Direct & Assumed	Net	Ceded Amounts Recoverable	Ceded Amounts Recoverable with zero Credit Risk Charge
Worst Year in 50	105,000	90,000	15,000	-
Worst Year in 100	125,000	105,000	20,000	-
Worst Year in 250	160,000	115,000	45,000	-
Worst Year in 500	210,000	135,000	75,000	-

Has the company reported above, its modeled Hurricane losses using an occurrence exceedance probability (OEP) basis? Yes

	Amount	Factor	RBC Requirement
Net Hurricane Risk	105,000	1.000	105,000
Contingent Credit Risk for Hurricane Risk	20,000	0.048	960
Total Hurricane Catastrophe Risk (AEP basis)	0	1.000	0
Total Hurricane Catastrophe Risk (OEP basis)	105,960	1.000	105,960
Total Hurricane Catastrophe Risk			105,960

Table 96 illustrates the calculation of the total R_{cat} risk charge for Fictitious.

TABLE 96

R_{cat} Charge for Fictitious Insurance Company
NAIC Risk-Based Capital 2018

Fictitious Insurance Company	
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts	-
Total R_1 Charge – Fixed Income Asset Risk	553,398
Total R_2 Charge – Equity Asset Risk	4,303,948
Total R_3 Charge – Credit-Related Asset Risk	310,060
Total R_4 Charge – Underwriting Risk--Reserves	9,273,342
Total R_5 Charge – Underwriting Risk--Net Written Premium	3,574,411
R_{cat} Calculation – Catastrophe Risk	
Total Earthquake Catastrophe Risk	76,440
Total Hurricane Catastrophe Risk	105,960
Total R_{cat} Charge – Catastrophe Risk	130,654

THE RBC CHARGE FOR BASIC OPERATIONAL RISK

The basic operational risk charge considers the risk of financial loss resulting from operational events that have not already been reflected in existing risk charges. This includes the inadequacy or failure of internal systems, personnel, procedures, or controls, and external events. Additionally, this accounts for legal risk, excluding reputational risk from strategic decisions.

The operational risk charge uses a percentage or "add-on" charge of 3.00%, applied to the Total RBC After Covariance Before Basic Operational Risk. The operational risk charge is further reduced by the sum of offset amounts reported by directly owned life insurance company subsidiaries that prepare and file the Life RBC calculation, adjusted for the percentage of ownership in the directly owned life insurance company subsidiaries (but not to produce a charge that is less than zero).

Table 97 illustrates the final calculation of NAIC RBC, including basic operational risk, for Fictitious.

TABLE 97

NAIC Risk-Based Capital 2018 Fictitious Insurance Company	
Total R_0 Charge – Subsidiary Insurance Companies and Misc. Other Amounts	0
Total R_1 Charge – Asset Risk - Fixed Income	553,398
Total R_2 Charge – Asset Risk - Equity	4,303,948
Total R_3 Charge – Asset Risk - Credit	310,060
Total R_4 Charge – Underwriting Risk--Reserves	9,561,305
Total R_5 Charge – Underwriting Risk--Net Written Premiums	3,574,411
Total R_{cat} Charge – Catastrophe Risk	130,654
Total RBC After Covariance Before Basic Operational Risk	10,849,641
Basic Operational Risk	325,489
Total RBC After Covariance including Basic Operational Risk	11,175,131

RBC MODEL ACT

Each state's statutes define a minimum amount of capital that a company must have to obtain a license in that state. These amounts vary by state and by lines of business but are usually relatively low, from $1 million to $5 million. These minimum capital amounts do not account for the characteristics and risk level of individual insurance companies.

The purpose of RBC is to help regulators identify insurers that are in financial trouble and that need regulatory attention. Therefore, the RBC requirements attempt to individualize the minimum capital requirement for each insurer. RBC is not a target-level of capital that insurers should hold; rather, it computes a minimum level of capital adequacy that a company must have to operate.

The RBC requirement is a dollar amount calculated from the NAIC RBC formula. The RBC that results from the formula (Total RBC After Covariance including Basic Operational Risk) is compared to a company's Total Adjusted Capital. Total Adjusted Capital is equal to the company's policyholders' surplus from page 3 of the Annual Statement that is reduced by:

1. The amount of non-tabular discount from Schedule P, Part 1, Summary, columns 32 and 33.
2. Tabular discount on medical reserves included in Schedule P, Part 1, Summary, column 24.

Additionally, a property/casualty insurer that owns a life insurance company subsidiary adjusts its surplus for the same amounts as the life subsidiary does for RBC purposes, namely by adding back the asset valuation reserve and 50% of the dividend liability to surplus. All such affiliate amounts are adjusted by the company's percentage of ownership.

The "RBC ratio" is the name used in the insurance industry to describe the ratio of Total Adjusted Capital to Authorized Control Level (ACL). While discretionary, ACL is the point at which the insurance commissioner is authorized to take control over the company under the RBC Model Act. ACL is equal to 50% of the Total RBC After Covariance including Basic Operational Risk.

RBC ratio
= Total Adjusted Capital / ACL
= Total Adjusted Capital / (Total RBC After Covariance including Basic Operational Risk * 0.500)

Regulatory action is permitted when total adjusted capital is within 50 percentage points of the ACL (i.e., when the RBC ratio is 150% or less). This is called the regulatory action level.

Table 98 summarizes the level of regulatory control relative to the percentage of total adjusted capital to both the RBC and ACL benchmarks:

TABLE 98

Action Level	Total Adjusted capital as a % of ACL Benchmark	Action Required if Inside Range	
		By State Insurance Department	By Company
1. Company Action Level	150% to 200%	None initially	Must submit a plan of action within 45 days to the insurance commissioner of the domiciliary state explaining how the Company intends to obtain the needed capital or to reduce its operations or risks to meet the RBC standards.
2. Regulatory Action Level	100% to 150%	Commissioner has the right to issue an order specifying corrective actions (Corrective Order) to be taken by the insurance company, such as by restricting new business. However, all action by the state insurance department is discretionary; nothing is mandated.	Must submit a plan of action within 45 days to the insurance commissioner of the domiciliary state explaining how the Company intends to obtain the needed capital or to reduce its operations or risks to meet the RBC standards.
3. Authorized Control Level	70% to 100%	Regulatory action still discretionary, but the insurance commissioner is authorized to take control of the company.	None initially
4. Mandatory Control Level	Below 70%	Insurance commissioner of the domiciliary state must rehabilitate or liquidate the company.	None initially

As noted earlier, the detailed calculations of a company's risk charges are not available to the public. However, two metrics of RBC are disclosed in the Five-Year Historical Data exhibit of the Annual Statement: Total Adjusted Capital and the ACL. A company's RBC ratio can be calculated by dividing the Total Adjusted Capital by the ACL from the company's Five-Year Historical Data. Table 99 provides the RBC ratios for Fictitious from its 2018 Five-Year Historical Data exhibit.

TABLE 99

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
RBC Analysis	2018	2017	2016	2015	2014
28. Total adjusted capital	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
29. Authorized control level risk-based capital	5,588,000	6,097,300	5,854,000	5,685,000	6,517,000
Total adjusted capital as a percent of ACL (= line 28 / line 29)	555%	518%	611%	573%	530%

As displayed in Table 99, the company's RBC ratios have been well over 300 points above the Company Action Level, the first action level within the RBC framework, which ranges from 150% to 200% of ACL. Note how the 2018 ACL amount of $5,588,000 is 50% of the Total RBC After Covariance including Basic Operational Risk shown in Table 97.[186]

As shown in the Actuarial Opinion Summary in the Appendix of this publication, Fictitious Insurance Company's range of reasonable reserve estimates is $43 million to $57 million with an actuarial central estimate of $50 million and carried reserves of $51.557 million. If the high end of the range was to materialize, total adjusted capital would decrease by $5.443 million ($57 million - $51.557 million). At $25.581 million, the total adjusted capital would still be well above the company action level of $11.450 million (by $14.131 million). Some Appointed Actuaries look to the impact on capital resulting from a movement in reserves relative to the high end of the actuarial range for purposes of selecting a materiality standard (see Chapter 16. Statement of Actuarial Opinion) in their Statement of Actuarial Opinion.

According to the NAIC 2018 RBC instructions, 98.5% of property/casualty insurance companies usually fall within RBC levels that require no regulatory action (i.e., having Total Adjusted Capital in excess of 200% of ACL).[187] However, just because a company's RBC results do not require regulatory attention, it does not necessarily mean that the company is strong financially. RBC is intended to be one of a number of tools used by regulators to evaluate financial solvency and therefore should not be used in isolation.

TREND TEST

Companies with RBC ratios exceeding 200% are not necessarily free from regulatory attention. Companies with an RBC ratio of between 200% and 300% are subject to the trend test. The trend test serves as an early warning to state insurance regulators of companies that may be on a path to reporting an RBC ratio below 200%, thereby triggering the company action level. The trend test looks to see whether companies with an RBC ratio of between 200% and 300% also have a current year combined ratio that exceeds 120%. Companies

[186] Note that the Authorized Control Level RBC of $5,587,565 is rounded to $5,588,000 in Table 12 and Table 99 for simplicity.
[187] NAIC, RBC Property & Casualty 2018 Forecasting & Instructions, page 48.

meeting the trend test criteria are required to comply with the company action level requirements despite having an RBC ratio in excess of 200%.

The combined ratio is calculated as the sum of:

(1) Loss and LAE ratio
(2) Dividend ratio
(3) Expense ratio

The loss and LAE ratio is calculated as calendar year net incurred loss and LAE divided by net earned premium from the Statement of Income. The dividend ratio is equal to policyholders' dividends divided by net earned premium from the Statement of Income. The expense ratio is equal to other underwriting expenses incurred plus aggregate write-ins for underwriting deductions from the Statement of Income divided by net written premiums from the Underwriting & Investment Exhibit.

THE FUTURE OF RBC

Since its inception, the RBC model has continued to evolve and this chapter has captured the details of the calculation at a point in time. In particular, over the past decade the RBC formula has had substantial development as a consequence of the comprehensive review of the solvency framework in the U.S. performed as part of the NAIC's Solvency Modernization Initiative. Such changes included the addition of new catastrophe risk and operational risk charges as well as enhancements made to various existing risk categories, such as investments in affiliates and reinsurance credit risk.

In the future the principles behind the RBC calculation are unlikely to change substantially, although we are likely to see continued enhancements to the calculation to reflect evolving practices in the measurement and management of risk.

One initiative currently undertaken by the NAIC is the development of a Group Capital Calculation that will provide regulators with another regulatory tool to understand the level of risk across an entire insurance group, i.e., aggregating across all of its operations, to complement the RBC requirements that are applicable at the legal entity level.

The RBC calculation is likely to also remain a key component of an insurance company's annual Own Risk and Solvency Assessment ("ORSA"). First introduced in 2015, the ORSA is an internal process undertaken by an insurer to assess the adequacy of its risk management and current and prospective solvency positions under normal and severe stress scenarios.

CHAPTER 20. IRIS RATIOS

OVERVIEW

National Association of Insurance Commissioners (NAIC) Insurance Regulatory Information System (IRIS) has been used since 1972 to help insurance regulators evaluate the financial condition of insurance companies. More than 5,000 companies file their financial statements with the NAIC each year.[188] IRIS is applied to property/casualty, life/accident and health, and fraternal insurance organizations.

IRIS is known by practicing property/casualty actuaries as being a series of 13 tests of financial ratios relative to benchmarks (i.e., ranges of "unusual values"). These are called IRIS ratios. However, the IRIS ratios are only one component of IRIS. IRIS includes other tools and databases of financial information that are used by state insurance regulators to monitor the financial health of insurance companies.

The instructions for computing IRIS ratios are currently included as part of the CAS Exam 6 U.S. Syllabus of Basic Education. As a result, we will not go into details of the calculations here but rather will provide a brief overview of the IRIS ratios. In Appendix I of this publication, we walk through the calculation and purpose of each of the 13 IRIS ratios, provide possible explanations for unusual values, and show the results of the IRIS ratio calculations for Fictitious Insurance Company using data from the 2018 Annual Statement.

IRIS RATIOS

The IRIS ratios are grouped into four categories:

- Overall ratios
- Profitability ratios
- Liquidity ratios
- Reserve ratios

Many of the ratios are computed in terms of policyholder surplus, with the intent of providing an early warning of companies in financial distress. The results of each of these ratios are not reviewed in isolation. When reviewing the results of ratios and investigating unusual values, mitigating or augmenting circumstances brought to light through other ratios and information are considered.

[188] Per the description of the publication Ratio Results for the IRIS on the NAIC and The Center for Insurance Policy and Research, NAIC Store, Financial Regulation Publication on IRIS, http://www.naic.org/store_pub_fin_receivership.htm#iris_results.

The reserve ratios are probably the most important ratios to the property/casualty actuary and where the actuary places most attention, as these ratios are specifically commented on by the appointed actuary in the Statement of Actuarial Opinion (SAO).

There are three reserve ratios:

IRIS ratio 11: One-year reserve development to policyholders' surplus
IRIS ratio 12: Two-year reserve development to policyholders' surplus
IRIS ratio 13: Estimated current reserve deficiency to policyholders' surplus

These three ratios focus on the development of an insurance company's net loss and LAE reserves for purposes of understanding reserve adequacy. IRIS ratio 11 is the same one-year development test as provided in the Five-Year Historical Data exhibit within the Annual Statement. It measures development in the company's net loss and LAE reserves over the past year, whether adverse or favorable, relative to prior year surplus. Essentially, this test looks to see how much surplus would have been absorbed or enhanced in the prior year as a result of adverse or favorable development in the corresponding net loss and LAE reserves. Adverse development is shown as an increase to reserves and therefore a positive number. Results of IRIS ratio 11 equal to or greater than 20% are considered unusual.

IRIS ratio 12 is the same two-year development test as provided in the Five-Year Historical Data exhibit within the Annual Statement. It measures development in the company's net loss and LAE reserves over the past two years, relative to surplus at the end of the second prior year. Like ratio 11, results of IRIS ratio 12 equal to or greater than 20% are considered unusual.

IRIS ratio 13 is a hindsight test. It looks at a company's net outstanding loss and LAE reserves at the immediate prior two years relative to calendar year earned premium for those years and adds to the reserves development that has emerged over that period (one-year development for the immediate prior year; two-year development for the year prior to that). The test then applies the average of the resulting two "adjusted" loss ratios to earned premium for the recent year to determine what the outstanding loss reserve should be. A calculated deficiency in recorded loss and LAE reserves of 25% or more is deemed to be unusual.

The purpose of this test is to identify companies that may not have gotten their reserves "right" in the past. The expectation inherent in this test is if companies have had adverse development in the past, they will probably have adverse development in the future. Regulators want to see if companies who have had such adverse development have corrected for it in their current estimates.

INTERPRETING THE RESULTS OF THE SYSTEM

The IRIS results are used to prioritize insurers requiring further analysis through examination by the state insurance regulatory system. An unusual value does not necessarily mean that the insurer is financially impaired. The NAIC IRIS Ratios Manual states, "No state can rely on the tools' results as the state's only form of surveillance."[189]

[189] Ibid., page 2.

PART V. FINANCIAL HEALTH OF PROPERTY/CASUALTY INSURANCE COMPANIES IN THE U.S.

INTRODUCTION TO PART V

In Part IV. Statutory Filings to Accompany the Annual Statement we presented details underlying several filings either included within or supplemental to the statutory Annual Statement. These and other tools, including on-site financial examinations and Financial Analysis Solvency Tools (FAST, of which the IRIS System is a part), provide a means for the regulator to monitor the financial health of an insurance company. Many of these tools are confidential. However, certain results can be derived from publicly available information, such as the result of RBC, which is included within the Five-Year Historical Data exhibit in the Annual Statement.

The monitoring performed by regulators is risk-focused and intended to identify financially troubled companies well before they are impaired. Regulators use the tools collectively to evaluate financial health and prioritize those insurers requiring additional scrutiny and analysis.

While policyholders and investors place heavy reliance on state insurance regulators in monitoring the health of property/casualty insurance companies, they themselves have access to the publicly available tools, such as quarterly and Annual Statement filings, the Statement of Actuarial Opinion, and Securities and Exchange Commission filings (for publicly traded companies). Also, to assess financial health, they rely on ratings and analyses performed by credit rating agencies, such as A.M. Best, Moody's, Standard & Poor's and Fitch. Each of these rating agencies uses internally developed capital adequacy models to perform qualitative and quantitative financial strength assessments and establish a company's rating.

In this section we provide a summary of the tools used by regulators and stakeholders in monitoring an insurance company's financial health and briefly explain how these tools are used in practice.

CHAPTER 21. MEASUREMENT TOOLS

Before we discuss what the tools mentioned in the introduction do, it is important to disclose what they don't do.

First, each measurement tool provides one piece of evidence and should not be taken as the only evidence of a healthy or troubled insurance company. For example, an insurance company may have "usual" values for each of its Insurance Regulatory Information System (IRIS) ratios, but something about the company's exposures or a pending regulatory decision may result in a risk of material adverse deviation in the company's reserves, and such risk could be material to the company surplus. The risk of material adverse deviation would be discussed in the Statement of Actuarial Opinion (SAO) by the appointed actuary, and in reading that disclosure, the regulator would determine the necessary steps for further investigation. In this example, neither the results of the IRIS ratios nor the SAO should be considered alone; other information should be incorporated into an evaluation of an insurance company's health.

Second, these tools don't supplant the audit of an insurance company. In fact, the audited financial statements are themselves a tool used by the stakeholders and regulators of an insurance company. Further, these tools will not ensure that the data used as input into the tools is accurate and complete, nor will they provide any insight as to whether the company's management has good internal management, systems and controls in place. However, weaknesses in company management, systems and/or controls eventually leach into the output from the tools.

Finally, these tools will not identify fraud, which can be difficult to uncover.

WAYS IN WHICH THESE TOOLS ARE USED TO MEASURE FINANCIAL HEALTH

When viewed together, these tools can provide valuable insight into the financial health of a property/casualty insurance company. The information gathered from one tool may not in itself be an indicator but may prompt additional investigation, either through the evaluation of other tools or inquiry of company management.

Further, the results from a single year may not immediately suggest financial impairment; however, a review of these results over several years may identify a trend in that direction. When reviewed together and across multiple years, these tools can be used to provide an early warning of companies that are of higher risk for financial impairment.

Annual and quarterly financial statements and schedules

Insurance companies are required to file financial statements every quarter. To summarize what we learned in preceding chapters, substantial detail is contained in the annual filing (i.e., as of December 31), including qualitative information in the form of detailed notes to financial statements and interrogatories. These statements are filed under Statutory Accounting Principles. As discussed, statutory accounting focuses on protecting the policyholder and therefore is known as maintaining more of a conservative stance relative to Generally Accepted Accounting Principles. Assets and liabilities tend to be measured on a basis that includes some cushion in the event of financial impairment.

There are two perspectives of financial health measured by the statutory financial statement: balance sheet strength and earnings potential. In terms of balance sheet strength, regulators are concerned with an insurance company's claim-paying ability and therefore focus on areas that could impair solvency. Two such areas are loss and loss adjustment expense (LAE) reserve and unearned premium reserve adequacy. Loss and LAE reserves make up the largest item on the liability side of an insurance company's balance sheet, representing one-third of total Liabilities, Surplus and Other Funds at year-end 2018 for the U.S. property/casualty insurance industry. Coupled with unearned premium reserves, these liabilities represent nearly half of the total 2018 Liabilities, Surplus and Other Funds for all U.S. property/casualty insurers in aggregate.

The Five-Year Historical Data exhibit provides a historical view of how an insurance company's losses have developed over time. Additionally, the Notes to Financial Statements provide management discussion of changes in incurred loss and LAE. Data from Schedule P, Parts 2 through 4 can also be used to perform independent tests of a company's reserve adequacy.

Because loss reserves are stated on a net of reinsurance basis on the balance sheet, reinsurance collectability is also an area of risk relative to the statutory financial statements. The provision for reinsurance is established on the liability side of the balance sheet to offset some of this risk by excluding a portion of reinsurance recoverables from unauthorized and overdue authorized reinsurers. Despite the establishment of the provision for reinsurance, reserve credit risk still exists. The Notes to Financial Statements are a means to identify reinsurance that is unsecured, uncollectible or in dispute. And Schedule F, Part 3 can be used to identify the company's reinsurers so that additional review of the reinsurers' financial strength can be performed. For example, the credit rating of each reinsurer can be determined from recognized rating agencies, such as those mentioned later in this chapter.

Accident-year loss and LAE ratios from Schedule P, Part 1 provide insight into the adequacy of claim reserves and unearned premium reserves. For example, property/casualty actuaries look at current accident year incurred loss and LAE ratios by line of business relative to prior year ratios adjusted for rate change and trend. Deviations from anticipated trends are

typically investigated to assess adequacy of loss and LAE ratios on the current accident years. To illustrate, for a line of business experiencing loss trend of +5% and rate change of -3% on premiums earned in 2019 over 2018, one might initially expect the accident year 2019 loss and LAE ratio to be approximately 8% higher (= 1.05 / 0.97 - 1) than that for 2018. That is, if the accident year 2018 loss and LAE ratio was 60%, one would expect the accident year 2019 ratio to be 65% (60% * 1.08). If the loss and LAE recorded in Schedule P, Part 1, for accident year 2019 was 55%, one might question the rationale behind an improvement in loss ratio, when deterioration was expected.

Additionally, deficiencies in loss and LAE reserves or current accident-year loss and LAE ratios in excess of 100% lead to further investigation of whether the unearned premium is adequate to cover losses that will emerge as premium is earned. In performing such an investigation, consideration is often made for investment income.

In terms of the asset side of the balance sheet, property/casualty insurance companies tend to invest in short-duration, relatively liquid fixed-income investments. Nearly 50% of the assets held by U.S. property/casualty insurers at year-end 2018 were in bonds. However, the financial crisis in 2008 taught us that even conservative investment strategies can pose a risk to insurance companies. Changes in asset values and yields on invested assets are monitored to assess this risk.

Further, investment in asset classes where the level of risk exceeds industry norms stimulates investigation of the hedging strategies a company has in place to mitigate risk.

While a company's balance sheet may appear financially solid, future earnings can be impaired by a company's underwriting, pricing and investment strategy. Although the Annual Statement schedules and exhibits may not be able to uncover a weakening in earning strength on their surface, trends in financial ratios and other analysis of year-over-year changes in income statement line items can provide an early warning. Examples of such trends include:

- Rapid and substantial growth in written premium and the timing of such growth relative to the underwriting cycle: In soft markets it is difficult to achieve significant growth without concessions on price or commission levels. The Five-Year Historical Data provides historical premium volume on a gross and net basis to assist in measurement of a company's growth.
- Increases in underwriting (or other) expense ratios: This may also be a sign that an insurer is conceding commission to grow or maintain business. Increases in commissions or other expenses mean that there is less premium available to pay losses. The income statement and Part 3 of the Underwriting and Investment Exhibit (U&IE) and the Insurance Expense Exhibit (IEE) are sources of this data.

- Deteriorating loss ratios: Historical loss ratios can be observed on a calendar-year basis in the Five-Year Historical Data or by accident year and line of business in Schedule P. Deterioration in loss ratios implies that pricing is not keeping pace with the underlying risk being underwritten. Further investigation into a company's price monitoring practices relative to peer benchmarks and ability to increase rates would be warranted.

- Increased exposure to catastrophic or large events: A review of writings by state in Schedule T and writings by line of business per the U&IE can help to identify catastrophe exposure. A company with premium concentration in Florida homeowners business suggests that the company may have increased exposure to hurricane risk. Further, a review of Part 2 of the general interrogatories provides information regarding a company's probable maximum loss and provisions in place to protect the company against such loss, such as a catastrophic reinsurance program.

- Losses on investments, change in mix of invested assets by class and/or declining yields on investment assets: Such trends may suggest a change in a company's investment strategy or lack of control in the strategy.

- Increases in the provision for reinsurance: Changes in the provision for reinsurance, as displayed in the capital and surplus account of the income statement, can be a sign of increased credit risk.

Quarterly statements provide more limited information than what is included in the annual filing. However, the primary financial statements remain in the same general format (i.e., Assets page; Liabilities, Surplus and Other Funds; Statement of Income; Cash Flow; and Notes to Financial Statements), as do many of the schedules. The evaluation date is the quarter-end and comparisons are made to the prior year-end. From the perspective of a property/casualty actuary, the biggest difference is that quarterly statement does not include Schedule P. Schedule P is replaced with a schedule titled "Part 3," which shows loss and LAE reserve development during the quarter for the latest three accident years and all years prior, for all lines of business in the aggregate. While this schedule provides a gauge of retrospective reserve strength during the current year, it does not provide all of the line of business detail that is provided annually in Schedule P.

There is a wealth of information contained in the annual and quarterly statements. But because more than 5,000 companies file their statements, state regulators of insurance companies may not have the resources available to analyze these filings in detail for every company domiciled or licensed to write business in their state. Rather, regulators rely on the other tools coupled with the financial statements and schedules to prioritize those companies of greatest risk of financial impairment.

IRIS

As discussed in Chapter 20. IRIS Ratios, IRIS is one tool used by regulators. The IRIS ratios focus on balance sheet strength and the earnings quality through measures that assess growth, profitability, liquidity, and reserve development/adequacy.

Although the IRIS ratio results are not widely available to the public, they can be calculated directly from an insurance company's Annual Statement. We have done so for Fictitious in Appendix I of this publication.

While there is no direct link to regulatory intervention based on the results of these ratios, the results of the IRIS values are considered by regulators in conjunction with other solvency monitoring tools, such as Risk-Based Capital (RBC), to prioritize those insurance companies requiring immediate regulatory attention.

RBC

RBC is another tool that considers balance sheet strength and future earnings. Balance sheet risk is considered in the asset risk charges (R_0 through R_3), while profitability of future writings is contemplated through the underwriting risk charges (R_4 and R_5) and the catastrophe risk charge (R_{CAT}).

The calculations underlying an insurance company's RBC are confidential and cumbersome to perform without using the spreadsheet provided with the NAIC instructions. However, the results of the RBC formula are provided in the Five-Year Historical Data exhibit within the Annual Statement. Stakeholders are able to review overall results and monitor changes over time.

RBC considers the risks and relative size of an insurance company in computing a required level of capital, whereas under IRIS, no adjustments are made to reflect what would be "usual" for an individual insurance company. Unlike IRIS, there is a direct link to regulatory intervention based on a comparison of the RBC level of required capital to the company's total adjusted capital. The NAIC RBC Model Act provides regulators with the authority to take control of a property/casualty insurance company if the company's RBC ratio falls below 100% of the ACL.

RBC isn't a fail-safe test for financial impairment. While certain of the RBC factors consider a company's own experience, the majority of the factors used to determine the level of required capital are based on industry-wide factors developed by the NAIC. As a result, while a company's RBC ratios may not require any specific action by the company management or regulatory authorities, this doesn't mean that the company is safe from future impairment.

The trend test is one way that the RBC results are used to identify companies that may become financially impaired. The purpose of the trend test is to identify companies likely to

fall in the company action level RBC in the coming year and require those companies to take action before that happens. The trigger for application of company action within the trend test is having an RBC ratio within 100 points of the company action level RBC, coupled with a current-year combined ratio of more than 120%.

SAO

The SAO provides assurance of a qualified actuary that the company's loss and LAE reserves are reasonable on a gross and net of reinsurance basis. It is not an opinion on the solvency of an insurance company but an opinion on the adequacy of what is typically the largest item on an insurance company's balance sheet. Significant deviations in this balance may have a material impact on a company's solvency. Therefore, the actuary will provide commentary of any significant uncertainties or risks that could result in a material adverse deviation in the company's recorded reserves.

A determination by the appointed actuary that the reserves are anything other than "reasonable" and relevant comments that indicate there is are significant risks and/or uncertainties that could result in material adverse deviation are two triggers of additional scrutiny by regulatory authorities.

One thing the SAO does not tell the reader is the company's reserve position within the appointed actuary's range, if the appointed actuary calculates a range. A company that is exposed to significant risks and uncertainties, with reserves lying at the lower bound of the actuary's range, would be subject to greater concern than a company exposed to the same level of risk with reserves in the high end of the appointed actuary's range. There is no document available for public review, which includes rating agencies, that contains the appointed actuary's range. The appointed actuary's range is contained in the Actuarial Opinion Summary (AOS), SAO documentation report, and usually found in the work papers of the company's external auditors.

As noted previously, the AOS is a confidential document, for regulators only. The actuarial report contains the range; however, these reports contain restrictions on distribution and use, due to their confidential nature, and therefore are not widely distributed. Similarly, while audit work papers may be subpoenaed for cause, they are not publicly available.

AOS

The AOS is valuable in providing the regulator with context as to the company's reserve adequacy by providing the company's position relative to the appointed actuary's point estimate or range, if calculated, on a net and gross of reinsurance basis. It also provides details that explain to the regulator the cause for adverse development in the company's reserves over the past five years, where such development has exceeded 5% of surplus in

three of those years. The AOS is also a confidential document that is only shared with the insurance company's state regulator.

Credit Rating Agencies

Stakeholders also rely on financial strength ratings (FSRs) issued by credit rating agencies (CRAs) in the evaluation of financial health. FSRs represent a CRA's evaluation of an insurance company's ability to meet ongoing obligations to its policyholders. This is in contrast to debt/issuer credit ratings, which are also provided by CRAs. Debt/issuer ratings represent the CRA's evaluation of a company's ability to meet debt obligations. Debt/issuer credit ratings are provided on the creditworthiness of the entity as a whole or on individual debt instruments.

Of the CRAs that rate insurance companies, A.M. Best is the only one that focuses exclusively on the insurance industry, providing FSRs and debt/issuer ratings. A.M. Best rates thousands of insurance entities across the globe. Other CRAs, such as Standard & Poor's (S&P), Moody's and Fitch serve a wide range of industries (ranging from aerospace to utilities, financial institutions and the public sector) and are prevalent in the area of debt/issuer ratings.

Ratings are based on qualitative and quantitative analysis of a company's financial statements and organization. Each CRA uses its own criteria. Qualitative factors can include corporate governance, product development, composition of capital structure, asset quality, investment strategy, reserve adequacy, claims management, contingent assets and liabilities, and the level of reinsurance dependency. Quantitative analysis includes running a company's financial data through capital adequacy models. Each CRA has its own internally developed model that computes required capital levels. Similar to RBC, the required capital levels are computed and compared to an insurer's capital to produce a ratio that translates to letter ratings. Examples of CRA models include Best's Capital Adequacy Ratio and S&P's Capital Adequacy Ratio.

The higher the rating, the greater the ability the company is deemed to have to meet its ongoing insurance obligations. The ability to meet ongoing insurance obligations generally diminishes as ratings decrease. For example, A.M. Best's FSR scale includes 7 rating symbols from A+ (superior) to D (poor), with rating notches applicable to symbols A+ through C (weak) to reflect a gradation of financial strength denoted by an additional "+" or "-". With the rating notches there are a total of 13 FSR designations. There are also 4 non-rating designations of E (in conservation or rehabilitation), F (in liquidation), S (rating suspended) and NR (not rated).[190] Regardless, the CRAs provide no guarantee that the insurance company will be able to meet its obligations.

[190] A.M. Best, Ratings & Criteria Center, Best's Financial Strength Rating, http://www.ambest.com/ratings/guide.pdf, 2019.

FSR ratings are generally established annually, with ongoing monitoring performed by the CRA analyst throughout the year to evaluate the impact of developments on a company's rating. Ongoing monitoring includes review of the following:

- Statutory financial statement filings
- Interim management reports and other information provided by the insurer to the rating agency
- Significant public announcements, including earnings releases/calls, made by the entity

A rating action or review can be considered at any time that A.M. Best becomes aware of significant development in the insurer's operations.

The following provides examples of the uses of FSRs by stakeholders of insurance companies:

- Individual and corporate policyholders want to make sure the insurance company will be there when needed to pay claims. They therefore look to the FSR as an indicator in their insurance buying decisions, weighing the company's rating against the cost of insurance.
- Many boards of directors of corporate policyholders require that their organization's insurance purchases are made with highly rated insurance companies. After the financial crisis, many large corporations required insurance companies to include cancellation endorsements to allow the insured to cancel without penalty if the carrier was downgraded below a certain level(s) by recognized CRAs.
- Insurance companies will also look at FSRs of reinsurers in making reinsurance buying decisions.
- Investors look at FSRs in their decision to invest in an insurance company, weighing risk relative to the company's rating with expected return.

HOW THESE TOOLS HAVE FARED – INDICATORS OF INSURANCE COMPANY INSOLVENCIES OVER THE PAST 40 YEARS

The measurement tools discussed in this publication are designed to assist in predicting or preventing all insurance company failures, but it is impossible for a tool to work in all circumstances. The intent, however, is that they identify the vast majority before it's too late.

Over the years, studies have been performed to detect the cause of insurance company failure and therefore sharpen the tools that are available to monitor solvency. The American Academy of Actuaries (AAA) has issued three such studies that, collectively, have examined property/casualty insurance company insolvencies over a 40-year period, from 1969 through 2009. The following contains the results of these studies and common themes observed in insolvent companies prior to their demise.

The AAA Property/Casualty Financial Soundness/Risk Management Committee (the FSRM) published a report in September 2010 titled Property/Casualty Insurance Company Insolvencies. This report revisited the issue of insurance company solvencies, which was examined in two previous studies in the 1990s by AAA, one based on property/casualty insurance company insolvencies over the period 1969 to 1987 and the other from 1988 to 1990. The AAA's research included submitting a questionnaire to insurance regulators on the causes of the insurance company failures over that time period. In each period, "under-reserving" and "mismanagement" were the first and second most frequently cited cause of insurance company insolvencies.

Given that the adequacy of loss reserves was historically cited as the primary cause of insolvency in the prior two studies, the 2010 report focused on the performance and characteristics of companies having the largest reserve deficiencies. Additionally, the FSRM studied five years' worth of historical financial data for 36 property/casualty insurance companies that became insolvent over the period 2005 to 2009 for commonalities. The 2010 report concluded the following:

- Insolvency is caused by a combination of factors. "Under-reserving" is a factor in the insolvency of property/casualty insurance companies but "is not the leading cause of insolvency." [191]

- Size, experience and diversification matters. "The majority of the companies was small, relatively new, and/or was concentrated in one line of business and/or state."[192]

- Good management and governance is essential. "The review of financial data for many of the companies showed evidence of poor management and decision-making, including little or no reinsurance, inadequate reinsurance for the amount of risk, very rapid premium growth, significant adverse development, inadequate pricing, and potentially serious data problems."[193]

The report also studied the SAO as an indicator of financial impairment over the immediate five years prior to insolvency. The FSRM concluded that the SAO alone is not a backstop for insurance company insolvencies, but it "can help identify those companies and/or categories of companies that could be in trouble."[194] Where opinions were available, the FSRM observed the following:

- Only one SAO was qualified, and the remaining were "reasonable" reserve opinions.

[191] American Academy of Actuaries Property/Casualty Financial Soundness/Risk Management Committee. Property/Casualty Insurance Company Insolvencies, September 2010, page 5.
[192] Ibid., page 16.
[193] Ibid.
[194] Ibid., page 18.

- Nearly 50% of the SAOs concluded that a risk of material adverse deviation existed in the company's loss and LAE reserves, 37% concluded that such a risk did not exist, and the remainder of the SAOs either did not comment on the risk of material adverse deviation or it wasn't clear if the appointed actuary deemed a risk of material adverse deviation existed.
- When stated, materiality standards were generally based on a percentage of surplus (between 5% and 20%).

We note that the NAIC Actuarial Opinion Instructions and Actuarial Standards of Practice issued by the Actuarial Standards Board have continued to include enhancements on disclosure requirements within the SAO since the period studied.

The commonalities identified in the above studies provide us with areas of focus when evaluating the tools used to measure financial health. The key message is that financial impairment is caused by a variety of factors, and the measurement tools discussed in this publication, when considered in unison, can help detect companies at risk for financial impairment.

PART VI. DIFFERENCES FROM STATUTORY TO OTHER FINANCIAL/REGULATORY REPORTING FRAMEWORKS IN THE U.S.

INTRODUCTION TO PART VI

As discussed in Part III. SAP in the U.S.: Fundamental Aspects of the Annual Statement, U.S. Statutory Accounting Principles (SAP) focuses on the solvency of insurance companies. However, other frameworks exist for solvency, general purpose financial reporting, and taxation. In this section we will examine these other frameworks, beginning with general purpose financial reporting.

The framework in the U.S. for general purpose financial reporting is U.S. Generally Accepted Accounting Principles (GAAP). We will focus on the key differences between U.S. SAP and U.S. GAAP. We will also study the importance of accounting for business combinations and consider calculations that involve actuaries in fair valuing the balance sheet in accordance with the requirements of U.S. GAAP. We will provide an overview of the emergence of International Financial Reporting Standards as a general purpose financial reporting framework. We will also provide a brief overview of the European regulatory framework known as Solvency II. Finally, we will discuss financial reporting for tax purposes.

CHAPTER 22. U.S. GAAP[195], INCLUDING ADDITIONAL SEC REPORTING[196]

OVERVIEW

U.S. Generally Accepted Accounting Principles (GAAP)for public companies is, by statute, determined by the Securities and Exchange Commission (SEC). The SEC has effectively delegated this responsibility since its inception to the private sector. Currently, the SEC looks to the Financial Accounting Standards Board (FASB) as the organization for establishing standards of financial accounting. In 2009, the FASB codified U.S. GAAP by publishing its Accounting Standards Codification (ASC). The ASC replaced several sources of authoritative U.S. GAAP literature from various standard setters. These sources included:

1. FASB
    a. Statements (FAS)
    b. Interpretations (FIN)
    c. Technical Bulletins (FTB)
    d. Staff Positions (FSP)
    e. Staff Implementation Guides (Q&A)
    f. Statement No. 138 Examples.
2. Emerging Issues Task Force (EITF)
    a. Abstracts
    b. Topic D.
3. Derivative Implementation Group (DIG) Issues
4. Accounting Principles Board (APB) Opinions
5. Accounting Research Bulletins (ARB)
6. Accounting Interpretations (AIN)
7. American Institute of Certified Public Accountants (AICPA)
    a. Statements of Position (SOP)
    b. Audit and Accounting Guides (AAG) – only for incremental accounting guidance
    c. Practice Bulletins (PB)
    d. Technical Inquiry Service (TIS) – only for Software Revenue Recognition

References to the newly codified standards usually start with the letters ASC followed by a series of numbers. Insurance specific guidance can be found in Section 944. For example, the definition of the measurement approach to unpaid claims estimates under U.S. GAAP can be found at ASC-944-40-30-1. It states: “The liability for unpaid claims shall be based on the estimated ultimate cost of settling the claims (including the effects of inflation and other

[195] Aligns with IASA Chapter 14.
[196] Aligns with IASA Chapter 15.

societal and economic factors), using past experience adjusted for current trends, and any other factors that would modify past experience." A free basic version of the ASC is available, after registering, at https://asc.fasb.org/.[197]

Historically, U.S. GAAP formed the foundation of U.S. Statutory Accounting Principles (SAP). From this foundation, U.S. SAP evolved over time (on a state by state basis), incorporating many modifications and exceptions to U.S. GAAP in the interest of establishing a more conservative accounting framework with a focus on solvency. In the 1990s, the National Association of Insurance Commissioners (NAIC) undertook a project (Codification) to consolidate the myriad state-based rules and exceptions to U.S. GAAP into a cohesive set of accounting principles. included in the NAIC Accounting Practices and Procedures Manual. SAP still remains the prerogative of each individual state; however, Codification provides a consistent and comprehensive framework of accounting and reporting guidance for each state insurance department to consider. As new pronouncements are made under U.S. GAAP, they are reviewed by the NAIC's Statutory Accounting Principles Working Group, which decides whether to adopt, reject or modify it for NAIC SAP. In turn, each state may accept what the NAIC has produced or adopt deviations or develop exceptions to the guidance that would apply to insurance entities domiciled in that state.

The fundamental difference between U.S. SAP and U.S. GAAP is driven by the intended user. U.S. SAP is intended for use by state insurance regulators and is thus focused on an insurance company's ability to pay claims, emphasizing the adequacy of surplus in the balance sheet. This is generally viewed as conservative-leaning philosophy to provide an element of margin if the regulator would need one day to step in to settle all current liabilities while not writing any new business. U.S. GAAP is primarily intended for use by investors and creditors and has historically been focused on the measurement of earnings emergence, through the income statement, over a specified reporting period. Given the objective of U.S. SAP, it is not surprising that it is viewed as a conservative basis of accounting in comparison to U.S. GAAP.

There are many differences between U.S. GAAP and U.S. SAP, but we will focus on those that actuaries need to be familiar with:

- Deferred acquisition costs (DAC)
- Premium deficiency reserves (PDR)
- Nonadmitted assets
- Deferred tax assets (DTAs)
- Invested assets
- Balance sheet presentation of reinsurance
- Ceded reinsurance – prospective and retroactive
- Structured settlements

[197] FASB, Accounting Standards Codification, https://asc.fasb.org/, 2012.

- Anticipated subrogation and salvage
- Discounting of loss reserves
- Goodwill under purchase accounting

DEFERRED ACQUISITION COSTS

DAC is an asset that is established under GAAP to defer the recognition of acquisition expenses to match the recognition of earned premium. Beginning in 2012, the deferral of acquisition costs is limited to those direct costs (i.e., those which would not have been incurred if the contract had not been entered into) related to the successful acquisition or renewal of a contract. In addition, certain direct marketing advertising costs can be deferred under very limited circumstances. All other expenses, either direct or indirect, must be expensed as incurred.

Certain companies are permitted to limit the capitalization (deferred expenditure) of DAC to those expenses they had been capitalizing prior to 2012 if they previously had not been capitalizing all expenses that met the definition of direct expenses related to the successful acquisition or renewal of insurance contracts. Capitalization of acquisition costs, through the establishment of a DAC asset, is not permitted under SAP. Therefore, all acquisition costs are expensed to current operations as incurred. This is keeping with the conservative philosophy of SAP.

Under SAP, if the ceding commission under a reinsurance agreement exceeds the anticipated acquisition cost of the business ceded, the ceding entity shall establish a liability, equal to the difference between the anticipated acquisition cost and the reinsurance commissions received, to be amortized over the effective period of the reinsurance agreement in proportion to the amount of coverage provided under the reinsurance contract. For example, when the commission rate of a company's direct business is 10% and the ceding commission rate charged for the business ceded is 20%, it is likely that after considering all other anticipated direct acquisition costs, the ceded commission is still higher than the direct acquisition cost of the business being ceded. While the recognition of a DAC asset is not permitted, and the corresponding direct acquisition costs should be expensed to current operations, in this example, a net liability must be recognized by the ceding entity, reported as a write-in liability item on the balance sheet rather than a gain to the current operations. This effectively defers the gain until such time as the premium is earned.

PREMIUM DEFICIENCY RESERVES

Under both GAAP and SAP, a PDR must be recognized with a charge to current operations when the unearned premium reserve (UPR) is insufficient to cover the anticipated losses, loss adjustment expenses, commissions and other acquisition costs, and maintenance costs associated with the unexpired exposure. When a company performs the premium deficiency analysis, insurance contracts should be grouped in a manner consistent with how policies are marketed, serviced and measured. A liability should be recognized for each policy grouping where a premium deficiency is indicated. Premium deficiency from one policy grouping cannot be offset by expected profits from any other grouping.

Under both GAAP and SAP, a company is allowed to include anticipated investment income in the premium deficiency analysis.

The major difference in the calculation of premium deficiency liability between GAAP and SAP is that under SAP, commissions and other acquisition costs should not be included to the extent that the related amounts have previously been expensed rather than established as an asset.

The table below, using three numerical examples, illustrates the difference in the calculation of premium deficiency liability between GAAP and SAP:

TABLE 100

Policy Grouping	UPR	Present Value of Total Expected Loss	Anticipated Investment Income	DAC	GAAP-basis Expected Profit	GAAP-basis Premium Deficiency Calculated	SAP-basis Expected Profit	SAP-basis Premium Deficiency Calculated
	(1)	(2)	(3)	(4)	(5) = (1) – (2) + (3) – (4)	(6)	(7) = (1) – (2) + (3)	(8)
A	$10,000	$8,000	$500	$2,000	$500	$0	$2,500	$ -
B	$10,000	$9,000	$500	$2,000	$(500)	$500	$1,500	$ -
C	$10,000	$12,000	$500	$2,000	$(3,500)	$3,500	$(1,500)	$ 1,500

Balance Sheet Presentation of Deferred Acquisition Costs and Premium Deficiency Reserves

Under GAAP, DAC is established as an asset and is presented net of ceded DAC. If a PDR is calculated, it first lowers the recorded DAC asset; once the DAC asset is exhausted, a separate PDR liability should be established.

Under SAP, any premium deficiency is either included in the UPR balance or reported as a write-in liability item.

The table below illustrates the difference in the presentation of DAC and PDR between GAAP and SAP.

TABLE 101

Policy Grouping	Original DAC	GAAP-basis Premium Deficiency Calculated	GAAP-basis DAC Asset	GAAP-basis PDR Liability	SAP-basis Premium Deficiency Calculated	SAP-basis DAC Asset	SAP-basis PDR Liability
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	$2,000	$ -	$2,000	$ -	$ -	$ -	$ -
2	$2,000	$500	$1,500	$ -	$ -	$ -	$ -
3	$2,000	$3,500	$ -	$1,500	$1,500	$ -	$1,500

NONADMITTED ASSETS

As discussed in Part III. SAP in the U.S.: Fundamental Aspects of the Annual Statement, SAP is focused on the ability of an insurance company to pay claims. To reflect that certain assets are not readily liquid, they are considered nonadmitted for purposes of determining the company's statutory surplus. One such example is furniture, fixtures and equipment.

For other asset categories, matters are more complicated as they may be partly admitted and partly nonadmitted. One such asset category is DTAs.

DEFERRED TAX ASSETS

Under GAAP and SAP, deferred taxes are established for temporary differences in the accounting and tax treatment of all assets and liabilities. For example, discounting of loss reserves for tax purposes but not for accounting purposes leads to a deferred tax asset. This is because you pay tax based on income (revenue minus expenses) under the tax accounting basis. If liabilities incurred are discounted for tax purposes, this leads to higher income, which produces more tax for the taxing authorities. But the discount on incurred losses will unwind over time and create an expense that will reduce future taxable income. Some or all of this reduction to future taxable income is what is recorded as a DTA.

The primary difference between GAAP and SAP is in the treatment of DTAs. For GAAP, DTAs are fully recognized, and a valuation allowance is established if, based on the weight of evidence, it is more likely than not that the DTAs will not be realized. GAAP establishes a hierarchy of evidence to be considered. This is a subjective determination requiring management to use significant judgment. Under SAP, there is a strict admissibility test for all DTAs in addition to the establishment of a valuation allowance. This can lead to recognition of less DTAs in SAP basis financial statements. Since January 1, 2012, the admitted portion is calculated as the sum of the following three components:[198]

[198] This recent change is not reflected in the 2007 Feldblum taxation CAS Study Note.

1. Federal income taxes paid in prior years that can be recovered through loss carrybacks for existing temporary differences that reverse during a timeframe corresponding with IRS tax loss carryback provisions[199] (not to exceed three years), including the amount established for tax loss contingencies related to those periods.
2. The amount of DTA expected to reverse during the forthcoming period (up to a maximum of three years), limited to a percentage of surplus. The period and percentage of surplus is determined based on the company's ratio of total authorized capital (with some adjustments) to authorized control level (ACL) Risk-Based Capital (RBC). For example, the December 31 ratio is calculated based on the Authorized Control Level RBC for the current reporting period, which is in process of being filed with the company's state of domicile. Different rules apply for non-RBC reporting entities such as mortgage guarantee insurers.
3. The amount of DTA after application of the first and second components that can be offset against existing DTLs. The character (i.e., ordinary vs capital) of the DTAs and DTLs must be taken into consideration. Ordinary DTAs can be admitted by offset with ordinary DTLs and/or capital DTLs; however, capital DTAs can only be admitted by offset with capital DTLs.

INVESTED ASSETS

Under SAP, investment-grade bonds and higher quality redeemable preferred stocks are held at cost or amortized cost while below-investment-grade bonds and lower quality redeemable preferred stocks are held at the lower of cost, amortized cost or fair value. All common stock and higher quality perpetual (i.e., non-redeemable) preferred stock are recorded at fair value. Lower quality non-redeemable preferred stock are held at the lower of cost or fair value. Changes in the carrying value of investments attributed to changes in fair value are recorded directly to surplus.

The accounting treatment of investment-grade bonds appears to be inconsistent with the conservative philosophy of SAP. In the case of increasing interest rates, the market value of older investment-grade bonds issued at a lower interest rate will decrease. Yet SAP allows for the asset to be carried at the higher amortized cost value. One possible explanation for this is that the difference is only temporary if the bond is held until maturity, as is typically done by most property/casualty insurers.

Effective December 31, 2017, SAP adopted a revised definition of bonds that identifies certain non-bond types of non-bond investments as SVO-identified investments that receive special statutory accounting treatment under the new guidance. These specifically identified investments shall be treated in the same way as those included in the revised definition of

[199] Under the Federal Internal Revenue Code, for nonlife insurance entities, ordinary losses can be carried back two years, while capital losses can be carried back three years.

bonds. The new guidance also introduces the concept of systematic value for SVO-identified investments and allows a company to elect the use of a documented systematic approach to value its higher quality SVO-identified investments if certain conditions are met. SVO-identified investments for which the company has not made this election, or do not qualify for the use of systematic value, should be measured and reported at fair value. Net asset value (NAV) is allowed to be used as a practical expedient to fair value for these investments.

The table below summarizes the accounting treatment under SAP for investments in bonds, common stocks, preferred stocks and SVO-identified investments[200]:

TABLE 102

Investment Type	NAIC Designation	Book Value
Bonds (both long-term and short-term)	1-2	Amortized cost
Bonds (both long-term and short-term)	3-6	Lower of amortized cost or fair value
Common Stocks	N/A	Fair value
Redeemable Preferred Stocks	1-2	Cost or amortized cost
Nonredeemable Preferred Stocks	1-2	Fair value
Redeemable Preferred Stocks	3-6	Lower of cost, amortized cost or fair value
Nonredeemable Preferred Stocks	3-6	Lower of cost or fair value
SVO-Identified Investments	1-2	Fair value unless systematic value is elected
SVO-Identified Investments	3-6	Fair value

Under U.S. GAAP, financial instruments such as bonds and stocks are classified as Available-For-Sale (AFS), Held-To-Maturity (HTM) or trading securities. The acquiring entity classifies the financial instrument at the time of acquisition, and the appropriateness of the classification is reassessed at each reporting date. If a security is acquired with the intent of selling it within hours or days, the security is classified as trading. However, at acquisition an entity is not precluded from classifying a security as trading if it plans to hold it for a longer period. Trading securities include both debt and marketable equity securities. Trading securities are recorded at fair value with changes in fair value recorded in the income statement. Investments in debt securities are classified as HTM only if the reporting entity has the positive intent and ability to hold those securities to maturity. Equity securities cannot be classified as HTM because they do not have a stated maturity date. HTM debt securities are recorded at amortized cost. Investments in debt securities and equity securities that have readily determinable fair values not classified as either trading securities or HTM securities

[200] Per SSAP No. 26R, SVO-identified investments refer to certain Exchange Traded Funds and Bond Mutual Funds that shall be treated as if they were bonds under the new guidance. For these investments, net asset value (NAV) is allowed as a practical expedient to fair value. The use of a systematic value is an irrevocable election. SSAP No.26R is effective December 31, 2017, but these investments shall be reported at their systematic value, if elected, starting on January 1, 2018.

are classified as AFS securities. The AFS category is the default or residual security classification. AFS securities are recorded at fair value with changes in fair value reported in other comprehensive income (OCI), resulting in a direct change to the value of U.S. GAAP equity, rather than changes in their fair value flowing through the income statement. Most property/casualty companies' financial instruments are classified and measured as AFS.

BALANCE SHEET PRESENTATION OF CEDED REINSURANCE

U.S. GAAP requires, due to limited rights to offset assets and liabilities, that liabilities be presented gross on the balance sheet with a separate asset for anticipated ceded reinsurance recoveries. SAP requires the balance sheet presentation of liabilities on page 3 of the Annual Statement to be presented net of ceded reinsurance. Schedule P provides additional detail on the gross liabilities.

Using the Fictitious Insurance Company as our example, we have created the table below illustrating how the balance sheet presentation differs between GAAP and SAP for the line items associated with ceded reinsurance. The table shows how the SAP-basis balances illustrated correspond to the specific line items on the annual statement of the Fictitious Insurance Company (see Appendix I).

TABLE 103

GAAP basis		
Assets:		
Reinsurance Recoverables		
On Paid Losses	$ 426,000	
On Unpaid Losses	$ 10,142,000	
Prepaid Reinsurance Premiums	$ 920,000	
Liabilities:		
Reserve for Losses and Loss Adjustment Expenses	$ 61,699,000	
Ceded Reinsurance Premium Payable (Net of Ceded Commission)	$ 440,000	
Unearned Premium Reserve	$ 12,815,000	
SAP basis		
		AS Line
Assets:		Page 2
Reinsurance Recoverables		
On Paid Losses	$ 426,000	16.1
Liabilities:		Page 3
Reserve for Losses and Loss Adjustment Expenses	$ 51,557,000	1+3
Ceded Reinsurance Premium Payable (Net of Ceded Commission)	$ 440,000	12
Unearned Premium Reserve	$ 11,895,000	9
Provision for Reinsurance	$ 283,000	16

CEDED REINSURANCE – PROSPECTIVE AND RETROACTIVE

The accounting for reinsurance depends on whether the reinsurance contract covers future or past insured events. The latter is called retroactive reinsurance and the former prospective reinsurance. The difference between SAP and U.S. GAAP for prospective reinsurance is limited to balance sheet presentation. illustrated in Table 103 above.

Retroactive reinsurance, however, has a different measurement approach for SAP compared to U.S. GAAP. SAP requires that undiscounted ceded reserves be recorded as a negative write-in liability. This leaves Schedule P unchanged, i.e., gross of the retroactive reinsurance. Any gain to the ceding company (excess of the negative write-in liability over the consideration paid for the reinsurance) is treated as write-in gain in other income and restricted as special surplus until the actual paid reinsurance recovery is in excess of the consideration paid.

U.S. GAAP requires ceded reserves to be recorded as a reinsurance asset. Any gain is deferred, thereby resulting in no immediate income or surplus benefit. The deferred gain is amortized using the interest method if the timing of the payments under the reinsurance treaty are reasonably estimable. Otherwise the proportion of actual recoveries to total estimated recoveries (the recovery method) determines the amount of amortization.

STRUCTURED SETTLEMENTS

To settle certain liability claims, an insurance company may purchase an annuity from a life insurance company with the beneficiary being the original claimant. For the case where a full release is signed by the claimant upon agreement to settle for the future annuity payments, the GAAP and SAP treatments are the same. The purchase price of the annuity is recorded as a paid loss and the claim is closed.

In the situation where a full release is not provided to the insurance company by the claimant, the insurance company is still contingently liable. In this situation, U.S. GAAP treats the structured settlement like a reinsurance contract, thus retaining the loss reserve and establishing an equivalent reinsurance recoverable. The accounting under SAP is the same as for structured settlements where a release is obtained, but it requires that the insurance company disclose the amount of these contingent liabilities in the Notes to Financial Statements.

ANTICIPATED SALVAGE AND SUBROGATION

In Schedule P reserves can be stated either gross or net of anticipated salvage and subrogation. If the reserves are stated net, column 23 in Schedule P discloses the amount of anticipated salvage and subrogation. This election appears to be a residual effect of pre-codification standards where certain states required reserves to be stated gross of anticipated salvage and subrogation.

Under U.S. GAAP, estimated realizable salvage and subrogation is subtracted from the unpaid loss estimates.

DISCOUNTING OF LOSS RESERVES

Statement of Statutory Accounting Principles (SSAP) 65 indicates that except for certain workers compensation and long-term disability claims with fixed and reasonably determinable payments, property/casualty loss reserves cannot be discounted. For those reserves that are tabular based, SSAP 65 is silent on the permitted discount rate. Most state regulations are also silent, but typically 3.5% per annum is used. For non-tabular reserves SSAP 65 recommends that the discount rate should be determined in accordance with Actuarial Standard of Practice 20, but capped at the lesser of:

1. If the company's statutory invested assets are at least equal to the total of all policyholder reserves, the company's net rate of return on statutory invested assets minus 1.5%; otherwise, the company's average net portfolio yield rate minus 1.5%
2. The current yield to maturity on a U.S. Treasury debt instrument with a duration that is consistent to the payment of the claims

For U.S. GAAP, ASC 944-40-S30-1 refers to an SEC staff bulletin that indicates it is permissible to apply the same discount calculated under SAP for U.S. GAAP purposes. It also indicates that an alternative discount rate could be used as long as the alternative rate "is reasonable on the facts and circumstances applicable to the registrant at the time the claims are settled." This SEC staff bulletin was prepared in response to an inquiry from a registrant asking if it was permissible to discount for U.S. GAAP purposes based on the company's historical investment yield.

GOODWILL UNDER PURCHASE ACCOUNTING

Under SAP, a business combination is accounted for as either a statutory purchase or a statutory merger. Business combinations that create parent-subsidiary relationships are accounted for as a statutory purchase. Alternatively, transactions are accounted for as a statutory merger if equity of one entity is issued in exchange for equity of the second entity, with the equity in the second entity then canceled. Prospectively, only one entity exists. Under statutory purchase accounting, the assets and liabilities of the acquired entity are recorded at their historical carrying (i.e., book) values. Goodwill is calculated as the difference between the purchase price and the net book value of the acquired entity. Goodwill is limited in the aggregate to 10% of the acquiring entity's capital and surplus (adjusted to exclude any net positive goodwill, electronic data processing equipment and operating system software, and net DTAs) for its most recently filed Annual Statement. Goodwill is amortized to unrealized capital gains and losses over the period in which the acquiring entity benefits economically, not to exceed 10 years.

Under U.S. GAAP, all business combinations are accounted for using purchase accounting, which requires all assets and liabilities of the acquired entity to be recorded at fair value (including all identifiable intangible assets). Goodwill represents the difference between the purchase price and the fair value of the net assets of the acquired entity. Goodwill is not amortized but is evaluated for possible impairment on a regular basis.

For example, Company XYZ acquired Company ABC (an insurance entity) on January 1, 2018. We assumed that the purchase price of Company ABC was $3 million, the fair value of Company ABC's net assets was $2 million, and the statutory surplus amount of Company ABC was $1.5 million. On January 1, 2018, we calculated that under SAP the goodwill recorded should be $1.5 million, the difference between the purchase price and the statutory surplus of Company ABC, and that under GAAP the goodwill recorded should be $1 million, the

difference between the purchase price and the fair value of the net assets. On December 31, 2018, we calculated that under SAP the goodwill recorded should be reduced to $1.35 million after amortization (assuming the goodwill should be amortized over 10 years) and that under GAAP the goodwill recorded should remain at $1 million as no impairment was identified.

In the case of a negative goodwill, under SAP, it should be recorded as a contra-asset and be amortized to unrealized capital gains and losses over a period not to exceed 10 years; under GAAP, the negative goodwill should first offset the book value of the acquired non-current assets (plant, property, equipment, intangibles, and other non-current and non-monetary assets) and the residual negative goodwill recorded as a bargain purchase gain through the income statement.

Due to these different approaches in calculating goodwill, the initial amounts of goodwill under SAP and GAAP can be significantly different. Chapter 23. Fair Value Under Purchase GAAP will discuss further the concept of fair value in business combinations.

SEC REPORTING

Companies with publicly traded securities are required to file quarterly (Form 10-Q) and annual (Form 10-K) financial reports with the SEC. In addition, companies are required to file a Form 8-K on an ad hoc basis for material events as they occur. The triggering events requiring the filing of an 8-K include a change in the principal officers or directors of the company, a change in the company's certified accountant, and entering or terminating a material definitive agreement.

These filings provide investors with quantitative and qualitative information about a company's business and operations, allowing investors to make informed and timely decisions. The key contents by section of a 10-K include:

- Part I – Business description, risks factors, unresolved comments from SEC staff, properties, and legal proceedings
- Part II – Financial statements and supplementary data, selected financial data, management's discussion and analysis of financial condition and results of operations, and controls and procedures
- Part III – Directors and executive officers of the company, executive compensation, securities ownership by certain beneficial owners and management, certain relationships and related transactions, and the fees of the principal accountant
- Part IV – Reports, exhibits and schedules from 8-Ks filed during the reporting period.

The 10-Q is an abbreviated form of the 10-K.

SEC reporting requirements for all registrants are mainly outlined in two regulations.

1. Regulation S-X – Form and Content of Financial Statements
2. Regulation S-K – Integrated Disclosure Rules

Regulation S-X contains general instructions to all companies around the composition and presentation of financial statements. Specifically, article seven provides detailed rules around the form and content of financial statement data and schedules of insurance companies. Many of these requirements are also required under GAAP. In particular, article seven requires the insurance company to state in the Notes to Financial Statements the:

- Basis of assumptions, including interest rates, for determining discounted liabilities
- Deferred acquisition costs amortized in the period
- Statutory stockholders equity and net income or loss

In addition, Regulation S-X requires certain schedules to be included in each registrant's 10-K form (their annual filing). These schedules include:

- Schedule III – Supplementary insurance information for each reporting segment, of which the following is required to be reported:
    - Deferred policy acquisition costs
    - Unpaid loss and loss expenses
    - Unearned premiums
    - Other policy claims payable
    - Premium revenue
    - Net investment income
    - Losses and loss expenses
    - Amortization of deferred policy acquisition costs
    - Other operating expenses
    - Premiums written
- Schedule IV – Reinsurance including amounts ceded and assumed
- Schedule VI – Supplemental information concerning property/casualty insurance operations that includes the same information as Schedule III in total across fiscal years for the current fiscal year and the two years prior

Following are examples of Schedules III (Table 104), IV (Table 105) and VI (Table 106) from a 2018 10-K filing for a company we are calling "Fictional Insurance Company".

TABLE 104

10-K Schedule III
Fictional Insurance Company
Supplementary Insurance Information
2016–2018
($ in millions)

Segment	Deferred Acquisition Costs	Claims and Claim Adjustment Expense Reserves	Unearned Premiums	Earned Premiums	Net Investment Income (1)	Claims and Claim Adjustment Expenses	Amortization of Deferred Acquisition Costs	Other Operating Expenses (2)	Net Written Premiums
2018									
Business Insurance	430	21,132	2,887	5,965	1,075	448	956	1,024	5,972
Financial, Professional and International Insurance	175	3,611	1,076	1,671	218	783	318	341	1,633
Personal Insurance	336	2,300	1,884	3,996	223	3,340	768	478	4,078
Total – Reportable Segments	940	27,042	5,846	11,632	1,516	8,571	2,041	1,843	11,684
Other	–	35	–	–	–	–	–	233	–
Consolidated	940	27,077	5,846	11,632	1,516	8,571	2,041	2,076	11,684
2017									
Business Insurance	424	21,231	2,825	5,669	1,135	3,425	921	1,003	5,717
Financial, Professional and International Insurance	185	3,686	1,126	1,747	231	895	322	320	1,691
Personal Insurance	329	2,222	1,800	3,870	244	2,636	759	457	3,985
Total – Reportable Segments	938	27,139	5,751	11,286	1,611	6,956	2,002	1,779	11,393
Other	–	36	–	–	–	–	–	219	–
Consolidated	938	27,175	5,751	11,286	1,611	6,956	2,002	1,998	11,393
2016									
Business Insurance	417	22,171	2,833	5,776	1,002	3,179	935	1,035	5,741
Financial, Professional and International Insurance	194	3,790	1,199	1,755	238	920	328	305	1,730
Personal Insurance	315	2,227	1,688	3,748	222	2,435	746	413	3,765
Total – Reportable Segments	926	28,188	5,719	11,279	1,462	6,534	2,008	1,753	11,235
Other	–	38	–	–	–	–	–	221	–
Consolidated	926	28,226	5,719	11,279	1,462	6,534	2,008	1,974	11,235

(1) See note 2 to the consolidated financial statements for discussion of the method used to allocate net investment income and invested assets to the identified segments.
(2) Expense allocations are determined in accordance with prescribed statutory accounting practices. These practices make a reasonable allocation of all expenses to those product lines with which they are associated.

TABLE 105

10-K Schedule IV
Fictional Insurance Company
Valuation and Qualifying Accounts
(USD in millions)

	Balance beginning of period	Charged to costs and expenses	Charged to other accounts (1)	Deductions (2)	Balance at end of period
2018					
Reinsurance recoverables	191	–	–	9	182
Allowance for uncollectible:					
Premiums receivable from underwriting activities	61	12	–	29	44
Deductions	19	3	–	2	21
2017					
Reinsurance recoverables	275	–	–	84	191
Allowance for uncollectible:					
Premiums receivable from underwriting activities	68	24	(1)	31	61
Deductions	26	(4)	–	2	19
2016					
Reinsurance recoverables	325	–	–	50	275
Allowance for uncollectible:					
premiums receivable from underwriting activities	68	32	1	33	68
Deductions	35	(2)	–	7	26

(1) Charged to claims and claim adjustment expenses in the consolidated statement of income.
(2) Credited to the related asset account.

TABLE 106

10-K Schedule VI
Fictional Insurance Company
Supplementary Information Concerning Property-Casualty Insurance Operations (1)
2016–2018
(USD in millions)

Affiliation with Registrant (2)	Deferred Acquisition Costs	Claims and Claim Adjustment Expense Reserves	Discount From Reserves for Unpaid Claims (3)	Unearned Premiums	Earned Premiums	Net Investment Income	Claims and Claim Adjustment Expenses Incurred Related to:		Amortization of Deferred Acquisition Costs	Paid Claims and Claims and Adjustment Expenses	Net Written Premiums
							Current Year	Prior Year			
2018	940	27,042	629	5,846	11,632	1,516	8,919	(443)	2,041	8,112	11,684
2017	938	27,139	626	5,751	11,286	1,611	7,610	(746)	2,002	7,213	11,393
2016	926	28,188	612	5,719	11,279	1,462	7,204	(763)	2,008	6,803	11,235

(1) Excludes accident and health insurance business.
(2) Consolidated property/casualty insurance operations.
(3) For a discussion of types of reserves discounted and discount rates used, see Item 1, Business, Discounting.

Regulation S-K contains the requirements for the nonfinancial statement portions of the 10-K filing. In conjunction with the Securities Act Industry Guides, Guide 6: Disclosures Concerning Unpaid Claims and Claim Adjustment Expenses of Property-Casualty Insurance Underwriters, the following items are required to be disclosed:

- A tabular analysis of changes in aggregate reserves for unpaid claims and claim adjustment expenses for each of the latest three one-year periods
- Method for estimating the effects of inflation, implicitly or explicitly
- A reconciliation between statutory and GAAP reserves for unpaid claims and claim adjustment expenses, including an explanation of the key differences
- The amount of discount embedded in the GAAP reserves for unpaid claims, including the pre-tax income effect of discount accrued and of discount amortized

The following in an example of the tabular analysis of changes in aggregate reserves.

TABLE 107

10-K Notes to Consolidated Financial Statements
Fictional Insurance Company
Insurance Claim Reserves
Reconciliation of beginning and ending property casualty reserve balances for claims and claim adjustment expenses
(USD in millions)

At and for the year ending December 31	2018	2017	2016
Claims and claim adjustment expense reserves at beginning of year	27,139	28,188	29,026
Less reinsurance recoverables on unpaid losses	5,941	6,629	7,272
Net reserves at beginning of year	21,198	21,559	21,755
Estimated claims and claim adjustment expenses for claims arising in the current year	8,919	7,610	7,204
Estimated decrease in claims and claim adjustment expenses for claims arising in prior years	(443)	(746)	(763)
Total increases	8,476	6,864	6,441
Claims and claim adjustment expense payments for claims arising in:			
Current year	4,082	3,133	2,843
Prior years	4,030	4,080	3,959
Total payments	8,112	7,213	6,803
Unrealized foreign exchange (gain) loss	(14)	(13)	166
Net reserves at end of year	21,548	21,198	21,559
Plus reinsurance recoverables on unpaid losses	5,494	5,941	6,629
Claims and claim adjustment expense reserves at end of year	27,042	27,139	28,188

Table 107 shows for each of the last three years the beginning reserve from the prior year-end, the provision for reserve development in the calendar year (ultimate incurred losses from accidents occurring in the current year plus change in ultimate incurred losses on accidents from prior fiscal periods), paid losses and the ending reserve. The beginning reserve plus the provision for reserve development minus paid losses equals the ending reserve. If the company makes an acquisition, this would be reflected in the beginning reserve balance.

Accounting Standards Update (ASU) 2015-09

In the early 2010s, the FASB explored a joint project with the International Accounting Standards Board (IASB) to update insurance accounting. Due to a lack of agreement between the Boards, the FASB decided instead to make targeted improvements to the current accounting under U.S. GAAP. Meanwhile the IASB went on to developing IFRS 17 (See Chapter 24).

The FASB initially proposed that short duration contract liabilities be discounted, to allow investors the ability to understand the present value of the liabilities, but with no adjustment for risk. Insurance companies and the analyst community provided feedback indicating that any discount would immediately be unwound by analysts, to be replaced with what they believe is the appropriate amount of discount. Instead the analysts requested additional disclosures be developed to allow them more insight to develop their own discount and to judge management's ability to establish the appropriate reserve estimates over time.

The resulting guidance that was issued in ASU 2015-09 added several new disclosures to U.S. GAAP financial statements for short duration insurance contracts. The key elements of ASU 2015-09 are as follows:

- The reserve roll-forward table required annually by the SEC (see Table 107) was codified into U.S. GAAP and required quarterly for all U.S. GAAP financial statements rather than just annually for SEC public filers.
- Accident year triangles of paid and ultimate loss and ALAE for up to 10 years on a net of reinsurance basis. These triangles were required to be reconciled in another schedule to the carried reserves.
- Current reported claim frequencies and current net loss and ALAE IBNR by accident year on the same level of aggregation as the triangles.
- A description of the methodologies used to estimate the loss and ALAE IBNR.
- The average annual payout of ultimate incurred claims based on the paid triangles and current ultimate incurred loss and ALAE.
- In the aggregate, a description of any significant changes in the methodology used to estimate the IBNR or the reported claim frequencies.

These additional disclosures were required to be presented at a level such that "useful information is not obscured by either the inclusion of a large amount of insignificant detail or the aggregation of items that have significantly different characteristics." The exceptions to this requirement were the quarterly roll-forwards and the description of significant changes in methodology, both of which are only required in the aggregate.

While there are similarities to the triangles in Schedule P for some of these disclosures, there are also important differences. Some of these differences include:

- These U.S. GAAP triangles require ALAE, not DCC. For example, this can drive significant differences if claims are handled by external adjustors, whose costs would fall under ALAE for U.S. GAAP as long as they can be allocated to a specific claim, but A&O expense for SAP.

- The level of disclosure for the U.S. GAAP triangles is principle based, while SAP has defined lines of business.
- Schedule P, even when presented for a group, only contains business written through U.S. entities for an insurance group. The U.S. GAAP disclosures may require business written globally, which can lead to significant foreign currency exchange issues.
- Under U.S. GAAP, the IBNR and reported claim frequency are as of the financial reporting date, and not in triangle form. The former limits the ability for a user of the financial statements to obtain and use case incurred data. The latter, while meant to help the user understand the severities in the underlying business, ignores that incurred amounts for reported claims tend to develop after being reported and claims reported later tend to have higher severities. Therefore, care must be taken by users in interpreting these disclosures.

The American Academy of Actuaries published a white paper on the considerations in implementing ASU 2015-09 in December 2016. In developing the white paper, the authors consulted with the AICPA's insurance expert panel and the SEC. Therefore, the reader is urged to read the white paper for further information.

https://www.actuary.org/sites/default/files/files/publications/FASB_SDC_Disclosures_White_Paper_120916.pdf

CHAPTER 23. FAIR VALUE UNDER PURCHASE GAAP

When an entity agrees to buy another entity, under U.S. Generally Accepted Accounting Principles (GAAP) the purchaser is required to state at fair value the assets and liabilities of the purchased entity. This accounting for business combinations is often referred to as Purchase GAAP (P-GAAP). As part of the P-GAAP process, certain intangible assets are included that would not typically be recognized and measured under U.S. GAAP. After the fair value of the assets and liabilities is determined, the implied capital (fair value assets minus fair value liabilities) is compared to the purchase price. If the implied capital is less than the purchase price of the purchased entity, the difference is defined to be goodwill and an asset equivalent to that amount is established. If the implied capital is greater than the purchase price of the purchased entity, the difference is immediately recognized as an operating gain into income.

As actuaries we may become involved in the estimation of certain balance sheet items on a fair value basis. In particular we may be asked to estimate the fair value of loss and LAE reserves and to estimate the value of business in-force (VBIF).

FAIR VALUE OF LOSS AND LAE RESERVES

Fair value under U.S. GAAP is defined in Accounting Standards Codification (ASC) 820-10-05 as “the price at which an orderly transaction to sell the asset or to transfer the liability would take place between market participants at the measurement date under current market conditions.” Such a value could be obtained by a market quote if there were a deep and liquid market for insurance liabilities. As there is no such market, the approach is “mark-to-model,” which entails determining the market value through an estimation process rather than using an observable market price. Recent actuarial literature supports an approach to estimating fair value of insurance liabilities based on three components. These components are:

1. The expected value of the nominal future cash flows related to liabilities incurred, for loss and LAE, as of the date of the transaction.
2. The reduction in those cash flows for the time value of money at a risk-free rate plus an element for the illiquid nature of the liabilities. This discount rate is meant to reflect the characteristics of the underlying liabilities.
3. A risk adjustment to compensate an investor for bearing the risk associated with the liabilities. This is meant to reflect the expected net present value of profit that an investor would demand in return for the risk inherent within the liabilities.

We will separately consider each in our example below, basing the expected value of the cash flows on what we deem to be a reasonable estimate of unpaid claims as of the sale date and the associated future payout pattern (first component), and the current risk-free rate matched to the duration of those liabilities plus an adjustment for illiquidity (second

component). For the third component of fair value, the risk adjustment, we use what is commonly referred to as the "cost of capital approach." This approach estimates the amount of capital required to support the reserves at each future evaluation date. The required return on a pretax basis in excess of the risk-free rate plus illiquidity adjustment is applied to this amount to calculate the value of the excess return expected by the investor in that future period. These values are in turn discounted to present value. The sum of the present value of excess returns from each future period is considered the risk margin.

The first component, expected nominal cash flows, can be derived from the current recorded reserve if management's best estimate is indeed an expected value that has no obvious inherent bias. There are two common ways to establish the cash flows by line of business from the nominal reserves. The first is to use the payout pattern based on the loss reserve development that the actuary would have selected in the course of his or her review of the reasonableness of management's recorded reserve. The second approach is to utilize the implied pattern based on the ratios of paid loss to ultimate loss by accident year. This latter approach may require more smoothing depending on the methods used in selecting ultimate losses and the stability, yet decreasing values, of incurred but not reported (IBNR) to case reserve ratios.

The second component is the amount of discount. Once the cash flows are estimated, the discounting calculation is fairly straightforward provided the rate is given. Given the third component is an explicit risk margin, the interest rate should reflect only the characteristics of the liability not related to the underlying risk in the outcomes for the purchasing entity. This is effectively the risk-free rate plus an element for the illiquidity of the liability, typically less than 100 basis points.

The risk-free rates are typically observed by referencing the U.S. Treasury Daily Yield Curve for the evaluation date of study, for liabilities settled in U.S. dollars. The liquidity/illiquidity premium (the terms "liquidity" and "illiquidity" are used interchangeably) is not readily available or typically understood. The need for an illiquidity premium is much easier to initially comprehend when considered from an asset perspective. Two assets with identical expected cash flows and no difference in the risk associated with those cash flows would be expected to be valued the same. But what if one was publicly listed and readily tradable, while the other is privately held? In this situation the ability to readily trade the asset would result in a lower discount rate being applied to the tradable asset's future cash flows than that of the privately held asset. The difference in the discount rates is the illiquidity premium for the privately held asset.

From a liability perspective, many find it hard to fathom why a liability that is less liquid should be lower in value than a liability that is liquid. It is easier to understand by considering the asset transferred to support the liability by the seller. The less liquid the liability is, the greater the opportunity for the purchaser of the liability to utilize the asset for their own gain

until the liability comes due. This opportunity cost results in a greater discount for the seller of the liability, i.e., a higher discount rate. How to derive the illiquidity premium is an active debate at the time of writing and beyond the scope of this study material.

The third and final component of the fair value of the loss reserves is the risk adjustment. The most logical approach to calculating a risk adjustment for an estimate that is meant to represent a market-based valuation is a cost of capital. The cost of capital approach is simply the present value of the future returns on capital that an investor would require for bearing the risk in the expected cash flows. The basic formula for the risk adjustment is:

$$\text{Risk adjustment} = (R - i)\sum_{t=0}^{\infty}\frac{C_{t\,to\,t+1}}{(1+i)^{t+1}}$$

Where:

- R = pretax required return on capital by the capital provider
- i = risk-free rate of return plus an illiquidity premium
- t = time
- $C_{t\ to\ t+1}$ = average capital carried over time t and t+1 to support the liability

The pretax required return can be approximated from the post-tax weighted average cost of capital that is typically produced by valuation experts performing the P-GAAP work on other intangible assets. The capital at any time t could be derived from using a suitable benchmark of the required capital for a hypothetical market participant based on Risk-Based Capital, S&P's capital model or Best's Capital Adequacy Ratio model.

As an example, we shall calculate the fair value of the loss and loss adjustment expense (LAE) reserves for the homeowners/farmowners line of business from Fictitious' Annual Statement. In performing the calculation, we have assumed the following:

- The recorded reserve of $1.457 million is a mean estimate of the expected future cash flows, i.e., no margin is present in management's best estimate.
- The appropriate payout pattern of the loss reserves, with some slight smoothing, can be derived from the ultimates in each accident year divided by the paid losses in each accident year[201].
- The discount rates are the U.S. Treasury yield curve as of the valuation date plus an adjustment of 35 basis points for the illiquidity premium.
- The payments are made halfway through each future period.

[201] Note the term "payout pattern" is used interchangeably by actuaries as either the ratio of paid losses to ultimate loss ("percent paid") or the ratio of ultimate loss to paid loss (which is equivalent to a paid age-to-ultimate factor).

- The required capital ratio is 20.1% of the unpaid claim estimates in each future period and is applied to the average amount outstanding over the period to estimate the required capital.
- The cost of capital is 10%, which is reduced by the discount rate associated with the average duration of capital to derive the risk cost of capital of 9.7%, (R-i) in the above formula.
- The return on capital is paid at the end of each future period.

TABLE 108

Fictitious Insurance Company
Homeowners/Farmowners
Fair Value of Loss and LAE Reserves – Net
As of December 31, 2018
(U.S.D in 000s)

			Anticipated Loss Payments By Payment Period									
		Total	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Payments in Period	(1)	1,457	879	261	104	112	38	27	7	8	9	11
Payment Duration	(2)		0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5
Discount Rate	(3)		0.095%	0.210%	0.336%	0.481%	0.711%	0.973%	1.231%	1.463%	1.633%	1.822%
PV of Payment	(4)	1,446	878	260	104	110	37	25	7	7	8	10
Undiscounted Future Payments	(5)		1,457	578	317	213	101	62	36	29	21	11
Required Capital Ratio	(6)		0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201
Average Required Capital	(7)		205	90	53	32	16	10	7	5	3	1
Risk Cost of Capital	(8)		0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097	0.097
Cost of Capital in Period	(9)		20	9	5	3	2	1	1	0	0	0
Duration	(10)		1	2	3	4	5	6	7	8	9	10
Discount Rate	(11)		0.155%	0.285%	0.395%	0.585%	0.865%	1.095%	1.385%	1.546%	1.725%	1.925%
Associated Risk Margin	(12)	40	20	9	5	3	2	1	1	0	0	0
Total Fair Value Reserve	(13)	1,486										

(1) Determined from reserve and payout pattern
(2) Payments assumed to occur on average halfway through the period
(3) From yield curve
(4) = (1) / [1 + (3)] ^ (2)
(5) Sum of remaining amounts from (1)
(6) Selected
(7) = Average of (5) from t and t+1 x (6)
(8) Selected
(9) = (7) x (8)
(10) Capital is assumed to be held until the end of the period
(11) From yield curve
(12) = (9) / [1 + (11)] ^ (10)
(13) = Total (4) + Total (12)

The resulting fair value for this line of business differs only slightly from the recorded reserve and is likely within the bounds of the level of accuracy for determining a reasonable reserve estimate. However, this is due to several factors, some of which are offsetting. The discount is minimal in this case due to the relatively short payout pattern of the line of business and the low level of interest rates on U.S. treasuries as of December 31, 2018.

The shorter payout pattern also affects how long you need to hold the capital. The less time the capital is held, the lower the future capital charges that can accumulate. In addition, in this case the line of business is not one that is associated with a large degree of reserve variability. Therefore, the required capital ratio is fairly small, which decreases the absolute return that a third party would demand to acquire the liability. Finally, working in the opposite

direction, there is the effect of discount rates on the risk margin. The low discount rates effectively increase the risk margin as the present value of the future returns on capital is higher.

In this example, you can see that the fair value of a liability can be affected by many moving pieces that can require an actuary to dig into the calculation to be able to explain differences between lines of business or between evaluation dates.

Not all believe that cost of capital is the right approach to producing a risk adjustment. Australian Prudential Regulation Authority requires reserves to be recorded at or about the 75th percentile of the discounted distribution of outcomes. In Canada, property/casualty actuaries judgmentally select the risk adjustment for loss reserves as a percentage value up to 20%. In addition, one could use a tail value at risk (T-VaR) approach. While the cost of capital can be calibrated to the pre-tax return investors require and the amounts of capital typically held for a risk, these other methods lack any calibration to the market. This makes it difficult to assert that the assumption of a certain confidence level, T-VaR or percentage load is required by a market participant in an arm's-length transaction.

VALUE OF IN-FORCE

Under P-GAAP, the fair value of deferred acquisition costs (DAC) is zero, given its lack of ability to generate future cashflows. In its place an asset is established based on the VBIF. This is not, as some companies assume, equivalent to the DAC asset. The VBIF is affected by the relationship of discount to risk adjustment on the liabilities expected to be incurred in connection with the unearned premium reserves, the amount of acquisition costs that were covered by the premium but previously expensed, and the estimated profitability of the unearned premium reserves. A shortcut technique to calculating the VBIF is to state at fair value the liabilities expected to be incurred in connection with the unearned premium reserves and subtract them from the unearned premium to obtain the implied VBIF. The steps to obtain a fair value of these liabilities are identical to those in obtaining the fair value of the loss reserves but with some additional steps. The expected and unbiased loss ratio is required to estimate the nominal expected liabilities from the unearned premium, and the cash flows in the first year should include an amount for policy maintenance costs. Consideration should also be given to the additional risk, event risk, present during the coverage period which can be reflected with a higher capital charge during that period if using a cost of capital approach to estimate a risk adjustment.

CHAPTER 24. INTERNATIONAL FINANCIAL REPORTING STANDARDS

International Financial Reporting Standards (IFRS) is a single set of global financial reporting standards issued by the International Accounting Standards Board (IASB). It was developed in the public interest as a high-quality set of general purpose standards that will provide users across borders and industries with transparent and comparable information. That is, they provide the world's integrated capital markets with a common language for financial reporting.

Most of the world's major economies permit or require the use of IFRS. The European Union, Canada, Hong Kong, and Australia are among the economies that use IFRS. At the time of writing, the Securities and Exchange Commission (SEC) in the U.S. does not allow domestic issuers of financial statements the ability to file using IFRS rather than U.S. Generally Accepted Accounting Principles (GAAP), but it currently permits foreign issuers to do so without reconciliation to U.S. GAAP.

In 2005, the IASB realized it was unable to issue a new standard for insurance contracts before IFRS was due to be implemented in the European Union. Consequently, under time constraints, the IASB issued an interim standard known as IFRS 4. IFRS 4 allowed entities to use a wide variety of accounting practices for insurance contracts, reflecting national accounting requirements and variations within the respective requirements. For instance, companies were allowed to continue to use their local GAAP but with minimum rules around that practice. However, the standard did not adequately reflect the true underlying financial position or performance of the insurance contracts as the contracts:

- Are accounted for differently across jurisdictions as national accounting requirements were allowed to be adopted;
- Often cover difficult-to-measure long term and complex risks, with uncertain outcomes;
- Are not typically traded in the market;
- May include a significant investment or deposit component – the amount that the insurer is liable to pay the policyholder regardless of whether the insured event occurs.

To address the issues above, in May 2017, the IASB issued IFRS 17 which was initially set to be effective on or after January 1, 2021, superseding IFRS 4. However, in 2018, the IASB voted to defer its effective date to January 1, 2022.

IFRS 17 establishes principles for the recognition, measurement, presentation and disclosure of insurance contracts. The objective is to:

a) Improve comparability between insurers

- Harmonization of insurance practices across jurisdictions
- New accounting framework to replace the various accounting treatments

b) Improve quality of financial information

- Inclusion of useful information in the financial statements
- Increase transparency on insurers' profitability.

SCOPE

IFRS 17 applies to contracts that are insurance contracts issued, reinsurance contracts held, and investment contracts with discretionary participation features. Similar to IFRS 4, it does not apply to insurance contracts in which the company is the policyholder, with the exception that the contracts are reinsurance contracts.

> The new standard retains the IFRS 4 definition of an insurance and reinsurance contract, which is "a contract under which one party (the insurer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder."

LEVEL OF AGGREGATION

IFRS 17 provides a consistent framework for accounting for all insurance contracts issued. A company applies the requirements of IFRS 17 to a group of insurance contracts rather than on a contract-by-contract basis. In grouping insurance contracts, a company is required to identify portfolios of contracts and divide each portfolio into:

a) A group of contracts that are onerous at initial recognition;

b) A group of contracts, at initial recognition, that have no significant possibility of becoming onerous subsequently; and

c) A group of remaining contracts

Contracts issued more than one year apart can't be grouped into the same group.

MEASUREMENT MODEL

The standard introduced a new measurement model referred to as the General Model with the measurement objective of fulfillment value for insurance contracts. Two variants of the General Model were also defined by the standard, the Premium Allocation Approach ("PAA") and the Variable Fee Approach ("VFA").

General Model

The General Model is the default model in IFRS 17. Under this model, insurance contracts are to be reported on the balance sheet as the total of:

a) Fulfillment cash flows – the current estimate of amounts that the insurer expects to collect from premiums and pay out for claims, benefits and expenses, including an adjustment for the timing and risk of those cash flows; and

b) Contractual service margin ("CSM") – the expected profit for providing future insurance coverage (i.e., unearned profit).

The fulfillment cash flows consist of the present value of future cash flows and a provision for risk adjustment. The risk adjustment component represents compensation that an insurer requires for bearing the uncertainty about the amount and timing of the cash flows that arise as it fulfills the insurance contract.

Upon initial recognition, the CSM is defined as the net difference between the fulfillment cash inflows and outflows, floored by zero. The CSM cannot be negative. If it is negative upon inception, the expected losses are to be recognized in the income statement immediately. The purpose of recognizing a positive initial CSM is to report expected profitability arising from the contract over time, reflecting the service to be provided.

The standard requires companies to update the fulfillment cash flows at each reporting date, using current estimates that are consistent with relevant market information. For instance, companies are to use current discount rates to measure insurance contracts. Using current discount rates, as opposed to historical rates (i.e., discount rates during contract inception) or a mix of rates, will reflect the characteristics of the cash flows arising from the insurance contract liabilities in a consistent manner across all companies. As such, changes in insurance obligations due to economic factors, i.e., interest rates, will be reflected in the financial statements in a timely way.

Premium allocation approach

The PAA is a simplification of the General Model. It is an option that insurers can elect to implement if the model is expected to produce results that would not differ materially from the General Model and if it doesn't contain any complex features. There is a safe harbor for contracts that have a coverage period of twelve months or less. Other contracts can be tested to allow them to use the PAA over the General Model.

The PAA splits the measurement of groups of insurance contracts into two pieces where needed, the liability for remaining coverage and the liability for incurred claims. The liability

for remaining coverage is approximately equal to the unearned premium less any premium receivable and deferred acquisition costs.

The liability for incurred claims is measured using the fulfilment cashflows from the General Model. No CSM is required for this portion of the liability as the coverage from the contract has expired for this portion of the liability.

Variable Fee Approach

The VFA is based on the General Model but with additional features to account for contracts with direct participating features.

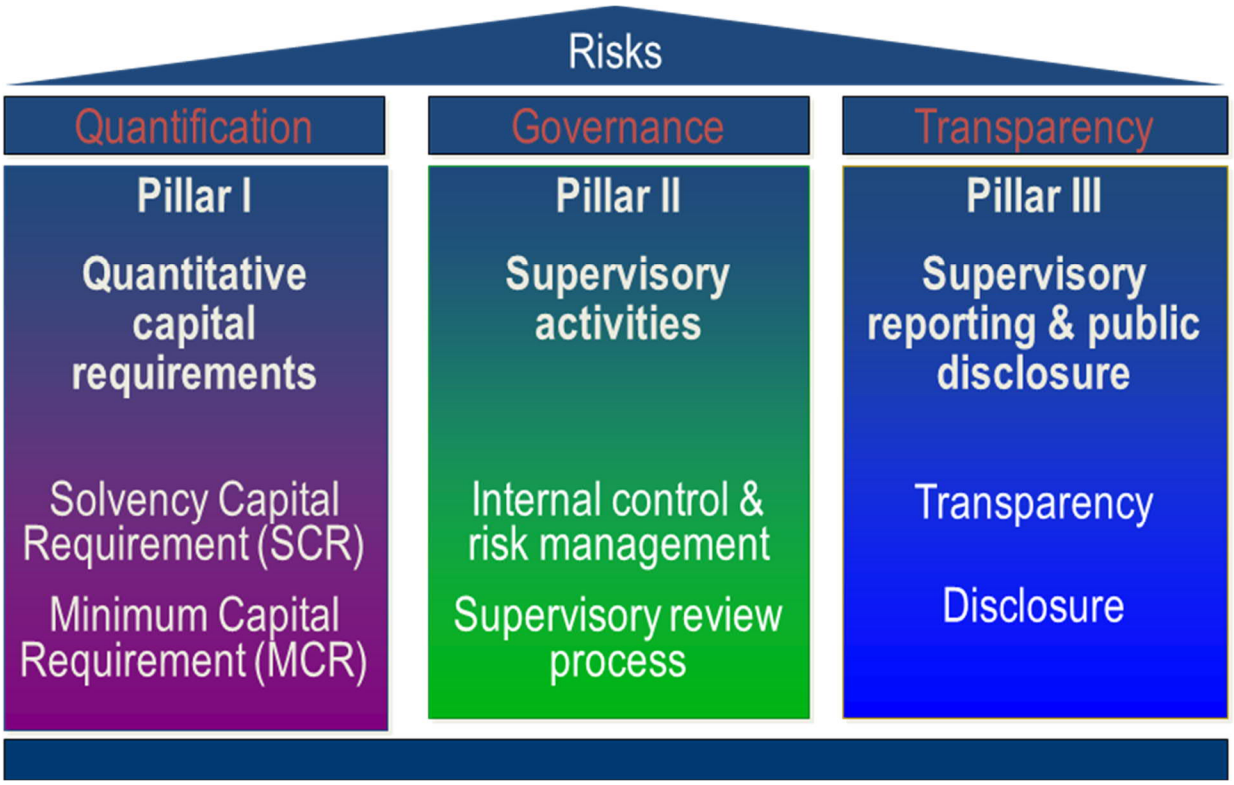
Overall, IFRS 17 and its basis for conclusions published by the IASB total 240 pages. It covers in-depth topics such as what is considered an insurance contract and therefore needs to be accounted for under the standard, the boundaries of such contracts, more specifics around the building blocks (fulfilment cashflows and CSM), the option to lock-in discount rates to avoid income statement volatility from mismatched accounting of assets, recognition of revenue, and required disclosures.

At the time of writing of this text, significant amounts of accounting and actuarial literature have been published on how to implement this complex standard. No doubt much more will be written in the coming years as the implementation date is reached. Those interested in reading more should first look to International Actuarial Note 100 that will be published by the International Actuarial Association during 2020.

CHAPTER 25. SOLVENCY II

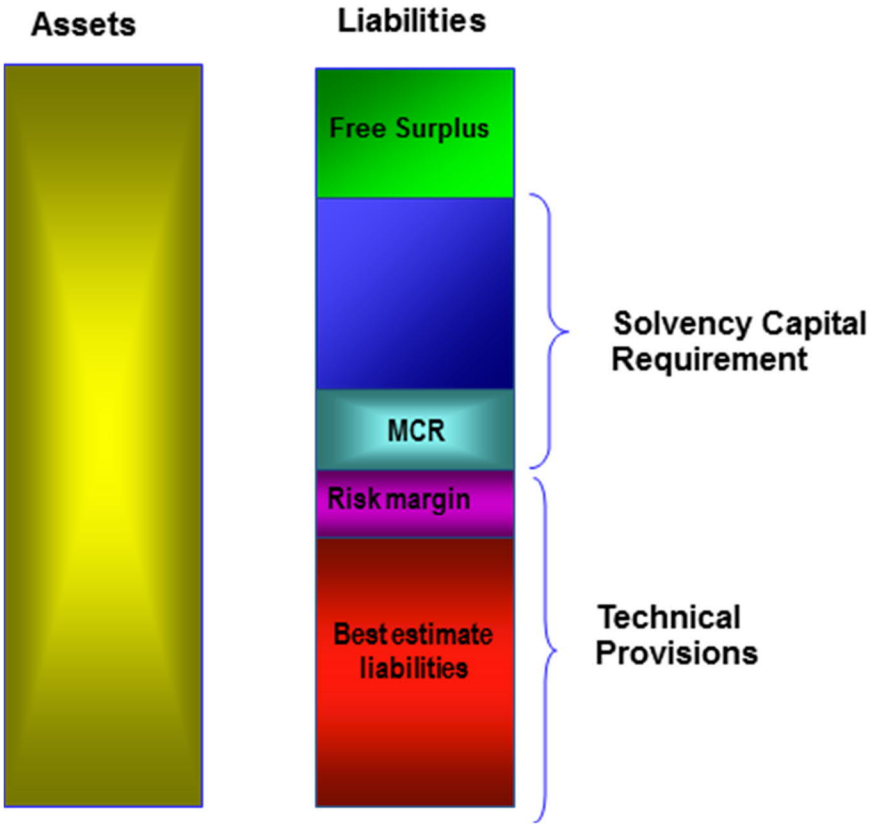
Solvency II is a principle-based insurance regulatory system governing how insurance companies are funded in the European Union. It links the required capital of insurance companies to their risk profile.

Solvency II came into effect on January 1, 2016. The new system is based on three pillars similar to those of Basel II. Those pillars are quantification, governance, and transparency.



PILLAR I – QUANTITATIVE CAPITAL REQUIREMENTS

Pillar I is focused on the quantitative aspect of Solvency II to obtain the solvency capital requirement (SCR) and minimum capital requirement (MCR). It also harmonized standards for the valuation of assets and liabilities. The measurement approach is summarized in the following diagram and is often referred to as the total balance sheet approach.



On the asset side of the balance sheet, non-insurance assets are recorded using the measurement approach under International Financial Reporting Standards (IFRS). Reinsurance assets are measured in the same way as insurance liabilities. On the liability side of the balance sheet, the technical provisions consist of the discounted best estimate of the liabilities and their associated risk margin. These are meant to represent the fair market value of the insurance liabilities, and although principles based, the approach to calculating them is fairly prescriptive. The best estimate of the liabilities is the expected value of the cash flows discounted using a risk-free rate; adjustments such as matching adjustment for illiquidity are available for long term liabilities. The risk-free discount rates are published by the European regulator on a monthly basis. The risk margin is calculated using a cost of capital method with the cost of capital above the risk-free rate (R-i from Chapter 23) equal to 6%.

Under Pillar 1 there are two capital requirements defined which are the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR). The SCR and MCR are capital requirements that must be held in addition to the best estimate liabilities. SCR is the capital that should be held to ensure that the insurance company can meet its obligations to policyholders and beneficiaries with certain probability and should be set to a confidence level of 99.5% over a 12-month period i.e., a one-year 99.5% Value at Risk (VaR). A company whose capital falls below the SCR will be subject to regulatory intervention. If it falls even

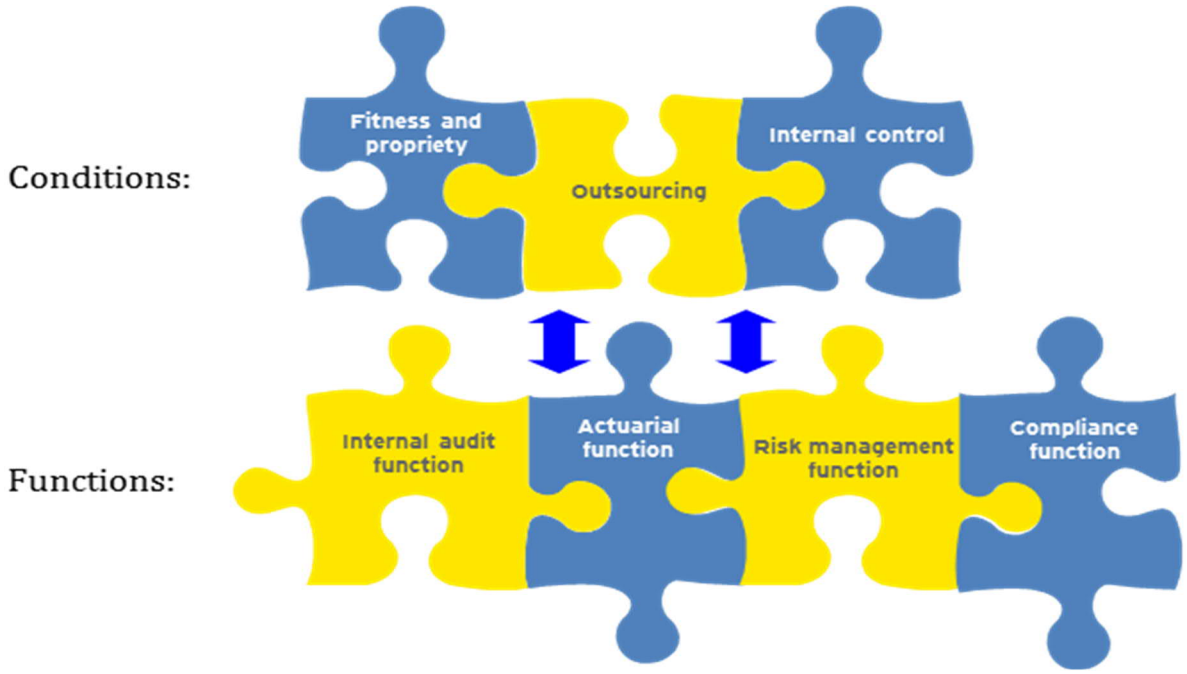
further below the MCR, the company will lose its license and will not be permitted to operate. Critics have noted that the one-year 99.5% VaR is not an adequate measure for bearing the risk to ultimate settlement. Solvency II requires consideration of recapitalization based on adverse development in each future annual period, yet doesn't assume you need to hold sufficient capital from inception to settlement without raising capital. Therefore, critics of Solvency II believe using one-year 99.5% VaR as the capital standard in the risk margin calculation does not provide a true fair market value.

The SCR can be calculated using the standard model, an approved internal model or a mix of both. To obtain approval for an internal model, the company has to demonstrate that the model is used in running the business, has been validated by an independent third party and is documented appropriately. The benefits of using an internal model are a model which is more appropriately tailored to the risk profile of the insurance company and the likely outcome of a lower SCR.

Any remaining amount between the assets minus the technical provisions and SCR is considered free surplus.

PILLAR II – SUPERVISORY ACTIVITIES

Pillar II provides insurance supervisors with the tools required to identify high-risk companies and the power to intervene. First, this pillar requires companies to have the governance structure in place to address the following key areas:



The functional areas, while each satisfying the conditions, should be allocated responsibility in a manner that avoids duplication. Each one is viewed as essential for an insurance business to operate effectively. Key responsibilities of each function include:

- Internal audit: Produce a report at least annually to the board of directors on any deficiencies of the internal controls and any shortcomings in compliance with internal policies and procedures. This function should have unrestricted access to information and staff.
- Actuarial: Ensure the reasonability of methods and assumptions used in calculating the technical provisions and providing a look-back analysis of best estimates against experience. Also, provide opinions on the overall underwriting policy and adequacy of reinsurance arrangements.
- Risk management: Monitoring the risk management function and maintaining an aggregated view. Ensure the integration of any internal model with the risk management function.
- Compliance: Ensure the internal control system is effective to comply with all applicable laws and regulation, promptly reporting any major compliance issues to the board of directors.

Pillar II also requires that companies complete an own risk self-assessment (ORSA). The ORSA has been defined by the European Insurance and Occupational Pensions Authority (EIOPA) as: "The entirety of the processes and procedures employed to identify, assess, monitor, manage, and report the short- and long-term risks a (re) insurance undertaking faces or may face and to determine the own funds necessary to ensure that the undertaking's overall solvency needs are met at all times."

An ORSA should contain at a minimum the following:

- The overall solvency needs, taking into account the specific risk profile, approved risk tolerance limits and the business strategy of the undertaking
- The compliance with the capital requirements and the requirements regarding technical provisions
- The extent to which the risk profile of the undertaking deviates significantly from the assumptions underlying the SCR, calculated with the standard formula or with its partial or full internal model

The ORSA results will periodically be reported to the supervisor who will use the results as input for their risk-based supervision and actions. The ORSA will also be the basis for the dialogue between the insurer and the supervisor regarding important decisions made by the insurer.

In the case of significant deviations from the risk profile, the ORSA will be the starting point of the supervisor's process that could lead to a capital add-on (i.e., an increase in the SCR).

PILLAR III – TRANSPARENCY

Pillar III represents the disclosure and reporting of information about a company's capital and regulatory position collected from Pillars I and II to the supervisors and the financial markets. Some items will be reported quarterly and others annually. The purpose of public disclosure of a company's financial and solvency position is to increase market discipline because companies are aware that their risk-based decisions will be in the public and supervisory domains.

COMPARISON TO THE U.S. SOLVENCY REGIME

Solvency II was developed as a group wide solvency regime. The U.S. regime, being state-based, is focused on the regulation of individual statutory entities with capital "walled" off from other entities in the group. However, pressure stemming from the financial crisis in 2008 combined with closer coordination between international insurance regulators led to the NAIC's Solvency Modernization Initiative ("SMI").

The SMI developed a "Windows and Walls" approach, giving windows for state insurance regulators to look into group wide operations and the effect those operations might have on a statutory entity, while maintaining the walls at the statutory legal entity level. Those windows that developed out of the SMI were:

1. Communication between regulators – enhanced communications between the state insurance regulators within the group

2. Supervisory Colleges – formally incorporate supervisory colleges of international regulators into the NAIC review procedures

3. Access to and collection of information – enhanced access to upstream entities within a group structure including regulated and non-regulated entities

4. Enforcement measures – tools to protect policyholders if violations occur

5. Group capital assessments –group supervision requires a panoramic view of capital needs of the group to be effective

6. Accreditation – state insurance regulators involved in group supervision should be accredited through the NAIC

The regulatory tool developed to implement several of these windows was the U.S. Own Risk and Solvency Assessment ("ORSA") requirement. The NAIC defines the ORSA as "an internal

assessment … conducted by [the] insurer of the material and relevant risks identified by the insurer associated with an insurer's current business plan and the sufficiency of capital resources to support those risks."

The NAIC has stipulated two primary goals for the ORSA:

1. To foster an effective level of Enterprise Risk Management (ERM) at all insurance companies through which each insurance company identifies, assesses, monitors, prioritizes and reports on its material and relevant risks, using techniques that are appropriate to the nature, scale and complexity of the insurer's risks, in a manner that is adequate to support risk and capital decisions

2. To provide a group-level perspective on risk and capital, as a supplement to the existing legal entity view

In order to meet these goals, an insurer that is a member of an insurance holding company system (as defined by state insurance law) and meets certain benchmarks for direct written and unaffiliated assumed premium is required to complete the ORSA process at least annually and create an ORSA Summary Report to be provided to its lead state commissioner and, upon request, to its domiciliary state commissioner. Additionally, the insurer must retain documentation and supporting risk management material to evidence the efficacy of its ORSA process, as these may be requested for review by the insurer's state commissioner(s).

The ORSA process is intended to be just one element of an insurer's overall ERM framework, in which the insurer assesses and summarizes the other elements of the framework, as well as linking these to the insurer's overall organizational structure, business strategy and capital management/planning process. Accordingly, the NAIC expects that the depth and detail of the ORSA and the ORSA Summary Report should reflect the nature of the size and complexity of insurer and its ERM framework. To assist state commissioners in gaining a high-level understanding of an insurer's ORSA, the NAIC has established three key areas that the ORSA Summary Report should cover:

Section 1: Description of the Insurer's Risk Management Framework

This section provides a summary of the insurer's ERM framework, covering how the insurer has integrated the following key principles into the organization: risk culture and governance; risk identification and prioritization process; risk appetite and tolerances/limits; risk management and controls; and risk reporting and communication. In summary, it brings together how the insurer identifies and categorizes its material risks and how it assesses, monitors and manages those risks against its established risk tolerances as it executes its business strategy.

Section 2: Insurer's Assessment of Risk Exposure

This section provides a high-level summary of the current quantitative and/or qualitative assessments of the insurer's risk exposure in both normal and stressed environments for each material risk category identified in Section 1. In addition to providing detailed descriptions and explanations of the risks identified by the insurer, the insurer describes the assessment methodology used and key assumptions made to evaluate the current risk level and how this compares to the relevant risk tolerances/limits for the risk under both normal and stressed conditions. For P&C insurers, relevant material risk categories typically include insurance risk (often divided into underwriting/premium risk, reserve risk and catastrophe risk), market risk, credit risk, liquidity risk, operational risk, and strategic risk.

Section 3: Group Assessment of Risk Capital and Prospective Solvency Assessment

This section provides a summary of the insurer's process for assessing capital adequacy in relation to its risk profile and how this process is integrated into the insurer's management and decision-making culture. For the Group Assessment of Risk Capital, the insurer describes its approach for assessing its group capital adequacy, including the basis of its definition of solvency, accounting/valuation basis, and the key methodologies, assumptions and considerations used in calculating available capital and risk capital required. For the Prospective Solvency Assessment, the insurer projects its future financial position, including its projected economic and regulatory capital to assess its ability to meet its internally defined risk appetite and its regulatory capital requirements based on the insurer's multi-year (typically three to five years) business plan. The Prospective Solvency Assessment is also completed under both normal and stressed environments.

Further detail on the requirements for completing an ORSA process and the details that are expected to be covered within each section of an insurer's ORSA Summary Report can be found in the NAIC's Own Risk and Solvency Assessment (ORSA) Guidance Manual[202].

Depending on their role within an insurer, actuaries may become involved in the ORSA process in several ways.

Due to the significant role they play in establishing and executing the insurer's ERM framework and policies, identifying and monitoring its key risks, and assisting senior leadership in overall risk and capital management, an actuary that serves as the insurer's Chief Risk Officer and actuaries that are members of its ERM function typically have ownership of the overall drafting of the ORSA Summary Report, particularly where these elements are covered within Section 1. Additionally, actuaries within the ERM function are frequently involved with the estimation and monitoring of the insurer's risk exposure in

[202] https://www.naic.org/documents/prod_serv_fin_recievership_ORSA-2014.pdf

relation to its risk tolerances for the material risks identified in Section 2, as well as the modelling of the group's risk capital adequacy and prospective solvency assessment detailed in Section 3.

Actuaries working within an insurer's pricing or reserving functions assist the ERM team in the risk identification and assessment/estimation process for the insurer's material insurance risks and may contribute to drafting sections of the ORSA Summary Report related to their risk area.

The models utilized by the insurer to estimate its material risk exposures, group risk capital and prospective solvency position are typically validated by another qualified actuary that was not involved in their development, which sometimes results in the involvement of a third-party party actuarial consulting firm.

Finally, actuaries assisting in the regulatory examination and financial analysis review of an insurance company may review the ORSA Summary Report to better understand the material risks the insurer is facing, its current and projected capital adequacy, and the strength of the insurer's risk management program.

CHAPTER 26. TAXATION IN THE U.S.

Beyond the solvency and general-purpose financial reporting frameworks, taxation is another framework applicable to insurance companies. Taxation has many forms, including the direct taxation of the income of corporations. Generally, tax is imposed on net profits from business, net gains, and other income. The income subject to taxation is determined under accounting principles that are modified or replaced by tax law principles where a different basis is determined as necessary by the relevant taxing authorities. In the U.S., an insurance company is taxed based on its statutory income, but with adjustments provided by the Internal Revenue Code ("IRC") that will be described herein.

Understanding the impact of federal taxation is important for insurance contract pricing, insurance company valuation, capital models construction, and tax returns preparation. Additionally, when there are changes to the tax law, it is important to understand the changes that occurred and the potential impact. In 2017, the Tax Cuts and Jobs Act of 2017 ("TCJA"), which became effective beginning tax year 2018, changed key federal tax rules. The changes most significant to property/casualty insurance carriers were related to the corporate tax rate, the discounting rules, and the international tax system.

In this chapter, we will present a summary of how taxable income is derived for property/casualty insurance companies from their statutory accounts, including a review of the adjustment of loss reserves for discounting. We will also review the process for determining taxable income attributable to statutory underwriting income and to investment income. Statutory underwriting income consists of premium revenue (i.e., earned premiums) minus losses and expenses incurred.

TAX BASIS EARNED PREMIUMS

On a tax basis, earned premiums are adjusted for "revenue offset". The need for the revenue offset stems from a lack of a deferred acquisition cost asset under statutory accounting. Assume that today a company wrote a policy effective January 1 of the following year for $100 but incurred $20 in acquisition costs. Under statutory accounting, the company would incur a $20 loss from establishing an unearned premium reserve of $100 and payment of $20 in acquisition costs. Rather than allowing property/casualty insurance companies to claim a tax credit on that "loss" under statutory accounting, the IRC has established a revenue offset convention, often referred to as the "20% haircut" The revenue offset convention assumes that acquisition costs are 20% of net written premiums for all lines of property/casualty business and all types of insurers and requires that 20% of unearned premiums be currently included in earned premiums. In our example, the unearned premium reserve would be reduced by $20, resulting in the income effect from writing this contract as $0.

Statutory earned premium is calculated as net written premium minus the change in the unearned premium reserve. Under the revenue offset convention, tax basis earned premiums are net written premium minus 80% of the change in unearned premium reserves.

Tax Basis Earned Premium
= Net Written Premium – (0.8 x (Change in Unearned Premium Reserve))

This formula can be rearranged to provide:

Tax Basis Earned Premium
= Statutory Earned Premium
+ (0.2 x (Change in Unearned Premium Reserve)).

Where the change in Unearned Premium Reserve
= Unearned Premium Reserve at end of period – Unearned Premium Reserve at beginning of period.

TAX BASIS INCURRED LOSSES AND LOSS ADJUSTMENT EXPENSES

Statutory calendar-year incurred losses are paid losses plus the change in full value loss reserves:

Incurred losses = Paid losses + Change in full value loss reserves
= Paid losses + (Full value loss reserves at end of period – Full value loss reserves at beginning of period).

For long-tailed lines of business, without the time value of money considerations that are considered in the pricing of policies, the result may be an underwriting loss under this statutory definition of incurred losses. As we previously discussed, the IRC does not provide an insurance company with a tax credit for what appears to be a temporary loss when investment income can be made on the reserves held before the claims are paid. To avoid this, tax basis accounting is more aligned with economic reality by requiring the discounting of loss reserves, albeit with defined rules and the lack of a risk margin/adjustment.

Our next section will discuss the process of discounting for taxes in more detail. For now, it is sufficient to understand that:

Tax Basis Incurred Losses = Paid Losses + Change in Discounted Reserves
= Statutory Incurred Losses – Change in Reserve Discount.

Loss adjustment expenses are treated in the IRC in the same manner as losses (i.e., estimated loss adjustment expense is subject to discounting). Other kinds of expense liabilities are addressed in a different paragraph in the IRC and may be subject to a different timing requirement.

INVESTMENT INCOME

Taxable investment income consists of income from bonds, mortgages, real estate and venture capital holdings, and realized capital gains. In addition, there are two key adjustments: proration of tax-exempt municipal bond interest and proration of dividends received deduction for stockholder dividends.

Tax-exempt municipal bonds produce tax-free income for most taxpayers. Similarly, the dividends received deduction (DRD) allows most corporate taxpayers to reduce taxable income by a portion of dividends received from other corporate taxpayers. Generally, earnings credited to the cash values of life insurance policies owned by corporate taxpayers are not recognized as current income. Insurance companies, however, are required under the IRC to include a portion of such tax-favored income and earnings in taxable income under a rule known as "proration". For a property/casualty insurer, proration increases taxable income by reducing the deduction for losses incurred by a percentage of such tax favored income.

Previously, the proration rules required a property/casualty insurance company to reduce its losses incurred deduction by an amount equal to 15% of the sum of its tax-exempt income, DRD and any earnings credited to life insurance products owned.

The TCJA amended the proration rules in a manner that retains the prior law's financial effect (i.e., a 15% reduction in the deduction from income taxed at a top marginal rate of 35%) while reflecting the reduction of the top corporate marginal rate from 35% to 21%. It does so by replacing the reduction percentage of 15% under previous law with a reduction percentage computed by dividing 5.25% (the "applicable percentage" referred to in the statute) by the top corporate tax rate of 21%, which results in a reduction percentage of 25%. Should the top corporate tax rate change in future years, the proration rate will also change.

BASE EROSION AND ANTI-ABUSE TAX (BEAT)

Now that we have determined taxable income, we can establish the regular tax liability, which is 21% of taxable income, a decrease from 35% under the previous tax law. Yet that is not necessarily the end of the calculations; if a U.S. insurance company makes a payment to a related foreign company, it might be subject to the BEAT.

In general, the BEAT calculations may apply when a domestic taxpayer, such as an insurance company that is domiciled in the U.S., obtains a "base erosion tax benefit" as a result of making a "base erosion payment" to a related foreign party. BEAT applies when the insurance company is part of a U.S. group of companies that has average gross receipts in the past three years equal to or in excess of $500M and if base erosion payments constitute 3% or more of the total deductions taken by the U.S. group on its current tax return.

The BEAT operates as a type of "minimum tax" that is added to the regular tax liability. It operates by ascertaining the "modified taxable income" of a U.S. taxpayer that has paid or incurred amounts to a foreign related party that provide deductions from regular taxable income or, in the case of reinsurance premiums to a foreign reinsurer, reduce gross income included in regular taxable income. Generally, modified taxable income is determined by adding back to regular taxable income the base erosion tax benefit caused by a base erosion payment. This minimum tax is equal to the excess of:

i. BEAT rate x modified taxable income over
ii. Regular tax liability

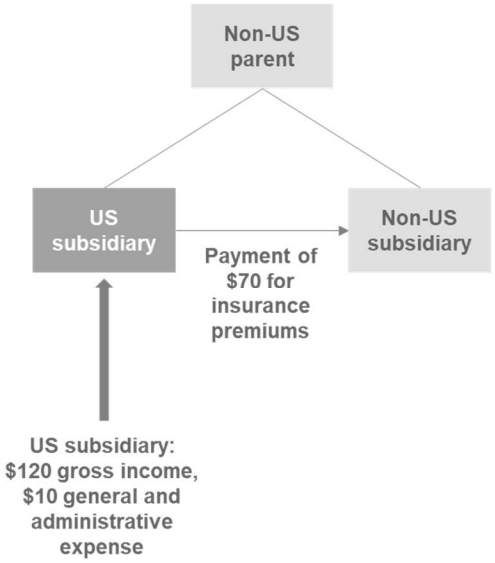
The BEAT rate in the 2018 tax year was 5%, moving to 10% in tax years 2019 through 2025, and then subsequently to 12.5%. The modified taxable income includes the income subject to the regular tax rate plus all deductible or excludible payments made to a foreign affiliate (base erosion payments) for the year.

Accordingly, to determine the BEAT charge a corporation should perform the following steps:

1. Determine if subject to the BEAT
2. Determine taxable income and compute regular tax of its U.S. companies
3. Compute modified taxable income
4. Apply the BEAT tax rate to modified taxable income
5. Compare regular tax liability with the BEAT

As an example, assume there is a domestic insurance company that is part of a U.S. group that meets the minimum requirements for being subject to the BEAT. In the 2019 tax year, this U.S. subsidiary has $120 of gross written premium for coverage effective January 1 (and so no unearned premiums), $0 investment income, $0 losses incurred and $10 of general and administrative expenses. Additionally, the U.S. subsidiary paid reinsurance premiums of $70 to a related foreign insurance company.

TABLE 109



	Ordinary	BEAT
US subsidiary taxable income	$40	$40
Add back base erosion payments, deductible payments made to foreign affiliates		$70
Modified taxable income		$110
Ordinary US tax at 21%	**$8.40**	
BEAT at 10%		**$11.00**
Additional tax due for BEAT	**$2.60**	

Note: The 10% BEAT rate is for illustrative purposes and will vary depending on tax year.

The U.S. subsidiary regular tax must first be determined:

- Taxable income = $120 gross written premium reduced by $70 of reinsurance premiums reduced by expenses of $10 = $40
- Regular tax = $40 * 21% = $8.40

Then the BEAT tax must be determined:

- Modified taxable income = $40 + $70 = $110
- BEAT tax = $110 * 10% = $11

As such, the additional tax due under the BEAT is $2.60 ($11 - $8.40).

It is noted, however, that payments to a foreign company that has elected to be taxed as a U.S. taxpayer under Section 953(d) are not subject to the BEAT.

DISCOUNTING LOSS RESERVES FOR TAXES

In the section within Chapter 22 titled “Deferred Tax Assets”, we discussed the reasons why statutory loss reserves are discounted in calculating taxable income. We shall now look in more detail at the method prescribed under the IRC for determining the discount required. The discounted loss reserves are calculated using three components:

1. The undiscounted loss reserves
2. The discount rate promulgated by the U.S. Treasury for that accident year
3. The payment pattern

The first component is obtained from Schedule P, Part 1. Reserves in Schedule P, Part 1 are net of tabular discount but gross of non-tabular discount. Therefore, any tabular discount will need to be eliminated to gross-up the loss reserves from Schedule P, Part 1 to an undiscounted basis.

The discount rate will be determined by the U.S. Treasury for each accident year and is to be based on the corporate bond yield curve., effective for taxable years beginning after December 31, 2017. This, this is a change from the previous tax law, where the discount rate was determined for each accident year based on the 60-month average of the Federal midterm rates.

The payment pattern for each line of business is determined every five years by the IRS based on the paid loss development from industry aggregate Schedule P, Part 1 data. Under the TCJA, insurance companies can no longer elect to use their own payment patterns.

Additionally, during the transition from the previous tax law to the TCJA in tax year 2018, unpaid losses and loss adjustment expenses for all accident years were discounted using the interest rate and loss payment patterns applicable to accident year 2018. The recognition of the adjustment (differences in taxable reserve estimates between the prior methodology and the new methodology at the same point in time) from the interest rate and payment pattern changes are evenly spread across eight tax years so that Companies are not burdened with the full change in the first year in taxable income from a change in the tax reserve. Below is an example of an implied eight year spread:

TABLE 110

Tax Year	Statutory Reserve	Tax Discount Factor*	Beginning of Year 2018 Net Change in Taxable Reserve**	8 Year Spread of Net Change***
2017	51,557	0.9		
2018		0.8	(5,156)	(644)
2019				(644)
2020				(644)
2021				(644)
2022				(644)
2023				(644)
2024				(644)
2025				(644)

* For example purposes, assume that 0.9 is the company implied tax discount factor under the prior law and 0.8 is the implied company tax discount factor under the current law

** -$5,156 = $51,557 * (0.8 - 0.9)

*** -$644 = -$5,156/8

TCJA IMPACT

As discussed above, the TCJA had the following key changes affecting insurance companies:

- Decrease in the corporate tax rate
- Repeal in the election for use of company-specific payment patterns
- Change in the determination of the interest rate
- Addition of the Base Erosion and Anti-Abuse Tax (BEAT)

These changes will have varying impacts, with the biggest drivers being the primary exposures that are written, what payment patterns were used in the past, and whether or not the company utilizes an affiliated foreign entity for certain transactions (e.g., reinsurance).

PART VII. CANADIAN-SPECIFIC REPORTING

INTRODUCTION TO PART VII

This part provides an overview of insurance financial reporting in Canada and a description of the main participants who influence the reporting framework in Canada. The Canadian regulatory Annual Statement and certain key elements of particular importance to Canadian actuaries are discussed.

CHAPTER 27. OVERVIEW OF FINANCIAL REPORTING IN CANADA

OVERVIEW

Insurance regulators, the accounting profession, and the actuarial profession play a role in setting the framework for insurance financial reporting in Canada.

Insurance is regulated in Canada at the federal and provincial levels. As a result, insurance companies can choose to be registered federally (across Canada) or separately in each province where they conduct business. The majority of insurers are regulated federally under the jurisdiction of the Office of the Superintendent of Financial Institutions (OSFI).[203] Registered[204] insurers are required annually to file detailed financial statements with supporting exhibits and quarterly updates. In addition, since 1992 registered insurers have been required to appoint an actuary ("Appointed Actuary") to value their policyholders' liabilities and to report at least annually on the current and future financial condition of the insurer. Each province regulates its own policy forms and monitors market conduct; hence, an insurer must also be licensed by each province in which it writes business regardless of where it is registered.

OFFICE OF THE SUPERINTENDENT OF FINANCIAL INSTITUTIONS

OSFI is a federal agency established in 1987 under the Office of the Superintendent of Financial Institutions Act. OSFI's mandate is to supervise all federally regulated financial institutions, monitor federally regulated pension plans and provide actuarial advice to the Government of Canada.

OSFI's activities are structured to protect the rights and interests of depositors, policyholders, pension plan members, and creditors of financial institutions and in so doing to contribute to the public confidence in a safe and sound financial system. This is accomplished through supervision under a principles-based regulatory framework which is designed[205] to identify key risks in certain institutions and intervene as appropriate and through regulation to enhance the financial system's safety and soundness.

OSFI differs from the National Association of Insurance Commissioners (NAIC) in that OSFI covers all federally regulated financial institutions and not just insurance companies. OSFI has authority over the entities it regulates, whereas the NAIC is a coordinating body that works

[203] Office of the Superintendent of Financial Institutions Canada, http://www.osfi-bsif.gc.ca/, May 20, 2017.

[204] A registered insurer in Canada is an insurer that is licensed to distribute insurance policies by either the federal regulator or a provincial regulator in Canada.

[205] OSFI's web site provides a table of guidelines such as the Minimum Capital Test which comprise the principles-based regulatory framework by which OSFI regulates insurers in Canada.

with state insurance regulators to provide support and coordination to the regulation of multistate insurers across the various states.

INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS)

On January 1, 2013, the Chartered Professional Accountants of Canada (CPA Canada) was established by both the Canadian Institute of Chartered Accountants (CICA) and the Society of Management Accountants of Canada (CMA Canada) to support the Canadian provincial accounting bodies unifying under the CPA banner. Certified General Accountant (CGA-Canada) integrated with CPA Canada on October 1, 2014, completing the unification of Canada's accounting profession at the national level.

In 2011, the Canadian Institute of Chartered Accountants (CICA) adopted all changes to IFRS standards issued by the International Accounting Standards Board (IASB) as part of the reporting framework for publicly accountable entities (PAE).[206] Regulated insurance companies meet the definition of PAEs and therefore were required to adopt IFRS as of January 1, 2011 (with comparative information for 2010). Today, this still holds with the merge to CPA Canada.

IFRS 4 is the current standard that deals with accounting for insurance contracts. It allows for the continuation of valuation practices in existence at the adoption of IFRS that Canadian Generally Accepted Accounting Principles (CGAAP) provided for insurance contracts. Under CGAAP the policy liabilities can be recorded in accordance with accepted actuarial practice (AAP) in Canada, which means the recorded liabilities are discounted to reflect the time value of money and include a provision for adverse deviation. The accounting for foreign branches and domestic insurers is substantially the same, and their financial statements are prepared in accordance with IFRS. However, there are two key differences for foreign branches:

1. The assets of foreign branches are required to be under the control of either the Minister of Finance of Canada or the branches' Chief Agent in Canada. The amount of assets under the control of the Minister of Finance is determined by risk based minimum capital requirements, further described in Chapter 29. Assets that are under the control of the Minister of Finance are to be placed in a trust.

2. There is no share capital account, as the entity is operating as a branch of its parent; therefore, there is a head office account instead.

[206] Publicly accountable enterprises, https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/international-financial-reporting-standards-ifrs/publicly-accountable-enterprises-paes.html, 2019

[5] Chartered Professional Accountants of Canada, https://www.cpacanada.ca , 2018.

CANADIAN INSTITUTE OF ACTUARIES

The Canadian Institute of Actuaries (CIA) is the national organization of the Canadian actuarial profession.[207] The CIA serves the public through the provision, by the profession, of actuarial services and advice of the highest quality.

AAP is the manner of performing work in Canada in accordance with the rules and the Standards of Practice (SOP) of the CIA. SOP is the responsibility of the Canadian Actuarial Standards Board,[208] and approval of standards and changes to standards are made through a process that involves consultation with the actuarial profession and other interested parties. If AAP conflicts with the law, an actuary should comply with the law but report the conflict and, if practical, useful and appropriate under the terms of the engagement, report the result of applying AAP.

The SOP published by the CIA are binding on fellows, associates, and affiliates of the CIA for work in Canada and for members of bilateral organizations, as defined in the bylaws, when those members are practicing in Canada. The standards consist of recommendations and explanatory text. A recommendation is the highest order of guidance in the SOP. Unless there is evidence to the contrary, there is a presumption that a deviation from a recommendation is a deviation from AAP. Explanatory text, which consists of definitions, explanations, examples, and useful practices, support and expand upon the recommendations.

The SOP consist of general standards and practice-specific standards. The general standards apply to all areas of actuarial practice. Usually, the intent of the practice-specific standards is to narrow the range of practice considered acceptable under the general standards.

Actuaries practicing in Canada should be familiar with relevant educational notes and other designated educational material affecting their practice. Educational notes are not binding on an actuary; however, educational notes and other designated educational material describe but do not recommend practice in illustrative situations. A practice that the educational notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily AAP for a different situation.

DIFFERENCES BETWEEN STATUTORY AND OTHER FINANCIAL/REGULATORY REPORTING FRAMEWORKS IN CANADA

Canadian insurers are required to prepare their financial statements in accordance with IFRS, as issued by the IASB, since 2011. The Canadian Annual Returns were also modified to include the impacts of changes to IFRS. Upon the introduction of IFRS, the insurance contracts standard (IFRS 4) permitted insurers to apply CGAAP for their insurance contracts. With IFRS 4, there was little impact on the financial statements of Canadian property/casualty

[6] Canadian Institute of Actuaries, http://www.cia-ica.ca/, 2018.

[7] Actuarial Standards Board, "About the ASB – Terms of Reference," http://www.asb-cna.ca/, September 27, 2017.

insurers, and as in the past, the statutory Annual Return was prepared on the same basis as the company's financial statements.

In May 2017, the IASB issued a new insurance contracts standard, IFRS 17, which is effective for annual accounting periods beginning on 1 January 2023. As companies were allowed to use a wide variety of accounting practices for insurance contracts under IFRS 4, it was difficult for investors and analysts to understand and compare results of insurers, especially from an international perspective. IFRS 17 is expected to improve the comparability of financial performance of insurance contracts between different entities. The standard applies to both life and property and casualty insurers and it requires insurers to divide insurance contracts into groups, and recognize groups of contracts as risk-adjusted present value of future cash flows, plus an amount representing the unearned profit in the group of contracts (named contractual service margin under IFRS 17). There is a simplified approach (premium allocation approach) that will apply to certain types of contracts, which is somewhat consistent with current Canadian practice, and it is expected that this simplified approach will be widely adopted by property and casualty insurers in Canada. The standard may have a significant effect on many insurers as their existing accounting policies are likely to differ from those required by the IFRS 17. Therefore, the costs involved in implementing IFRS 17 are expected to be substantial because of the need for significant systems development in order to capture the required information.

Statutory Accounting Principles (SAP) is the accounting framework under which all U.S. insurance companies are required to report for state regulatory purposes. There are many differences between SAP and IFRS, including the valuation of invested assets and the valuation of policy liabilities. These differences arise because in Canada there is a desire to achieve consistency with published financial statements and in the U.S. there is a focus on insurer solvency.

CHAPTER 28. CANADIAN ANNUAL RETURN

OVERVIEW

All insurers are required to file an Annual Return (or Canadian Annual Statement) based on International Financial Reporting Standards (IFRS) in each province where they are licensed and with the Office of the Superintendent of Financial Institutions (OSFI) if they are federally regulated. The Annual Returns are prescribed forms that are annually reviewed by the Canadian Council of Insurance Regulators. The full Annual Return is to be completed and filed annually within 60 days of year-end. In addition, there is a requirement to file interim returns on a quarterly basis within 45 days of the end of each quarter.

PREPARATION OF KEY SCHEDULES

The Canadian Annual Return is logically divided into a number of sections as follows:

- General information: This section contains information about the company, its officers, and directors and a summary of selected financial data for five years.
- Consolidated financial statements: This section shows the company's balance sheet (assets, liabilities, and equity), statement of income; statement of retained earnings and reserves; statement of comprehensive income and accumulated comprehensive income; statement of cash flows; statement of changes in equity; and notes.
- Statutory compliance: This is the Minimum Capital Test (MCT) for domestic insurers or the Branch Adequacy of Assets Test (BAAT) for foreign insurers, including supporting exhibits, related to capital adequacy.
- Investments: This includes detailed information relating to the company's invested assets.
- Miscellaneous assets and liabilities: This includes items such as other receivables and interests in joint ventures.
- Premiums, claims, and adjustment expenses: This section contains detailed information relating to unearned premiums, incurred losses, claims liabilities, and runoff of claims and adjustment expenses.
- Provincial and territorial summaries: This provides geographical premium and claims information.
- Reinsurance ceded: This includes information related to premiums and claims ceded.
- Commissions and expenses: This includes details relating to commissions and operating expenses.
- Out of Canada exhibits: This section provides detail relating to operations outside of Canada.

- Non-consolidated financial statements and exhibits: Financial statements and many of the exhibits are also provided on a non-consolidated basis.

The report of the appointed actuary must be submitted with the Annual Return. It is expected that the values reported in the financial statements for the items included in the opinion of the appointed actuary not differ materially from the values opined on by the appointed actuary.

BALANCE SHEET

Appendix II of this publication shows separately the assets and liabilities and equity elements of the balance sheet for the total of all Canadian property/casualty insurance companies as reported by the OSFI as at December 31, 2017. The Appointed Actuary should be familiar with all aspects of the Annual Return; however, the Appointed Actuary is opining on the policy liabilities and is thus expected to demonstrate a significant understanding of all elements of the policy liabilities (claims and policy liabilities in connection with unearned premiums).

The claims and premium liabilities are typically the largest liabilities on the balance sheet of an insurer and are reported through the following:

1. Claims liabilities:
    a. Direct unpaid claims and adjustment expenses
    b. Assumed unpaid claims and adjustment expenses
    c. Ceded unpaid claims and adjustment expenses
    d. Other amounts to recover
2. Premium liabilities:
    a. Gross unearned premiums
    b. Net unearned premiums
    c. Premium deficiency reserves
    d. Other net liabilities
    e. Deferred policy acquisition expenses
    f. Unearned commissions

Table 111 summarizes the balance sheet provided in Appendix II of this publication into key items from the perspective of the Appointed Actuary.

TABLE 111

Balance sheet summary – Canadian property/casualty companies at December 2018			
Assets		Liabilities and Equity	
Total Investments	69,100,568	Unpaid Claims and Adjustment Expenses	58,646,287
Unpaid Claims Recoverable from Reinsurers	17,103,237	Unearned Premiums	25,688,427
Unearned Premium Recoverable from Reinsurers	4,101,116	Unearned Commission	787,090
Deferred Policy Acquisition Expenses	4,509,415	Other Liabilities	8,782,174
Other Assets	30,208,179	Equity	31,118,537

As illustrated, the unpaid claims and loss adjustment expense (LAE) and unearned premium liabilities are the most significant liabilities on the balance sheet. In Canada, the claims and premium liabilities are reported on the balance sheet on a gross basis. That is, the liabilities are reported gross of reinsurance, and an asset is recorded to reflect the amount of the liabilities expected to be recoverable from reinsurers, which, as illustrated above, is a significant asset on the balance sheet.

The liabilities in Canada are recorded in accordance with AAP, which requires that the liabilities be equal to the value discounted to reflect the time value of money plus a provision for adverse deviation (PfAD). A discount rate has to be selected to determine the present value of the liabilities. This discount rate is defined by the Canadian Institute of Actuaries as follows:

> "The expected investment return rate for calculation of the present value of cash flow is that to be earned on the assets, taking into account reinsurance recoverables, that support the insurance contract liabilities. It depends on
>
> the assets owned at the calculation date,
> the allocation of those assets and related investment income among lines of business,
> the method of valuing assets and reporting investment income,
> the yield on assets acquired after the calculation date,
> the capital gains and losses on assets sold after the calculation date
> investment expenses, and
> losses from asset depreciation.

> The actuary need not verify the existence and ownership of the assets at the calculation date, but would consider their quality." [209]

This definition requires the Appointed Actuary to also understand the assets on the balance sheet, how they are valued and the insurer's investment policy. Typically, a large proportion of invested assets are used to support insurance contract liabilities. Therefore, the Appointed Actuary should be able to estimate the expected investment return on those assets. The following chart, Table 112, illustrates a simple calculation of the market yield of a bond portfolio. The market yield and modified duration are calculated using readily available spreadsheet functions and the overall yield is calculated using the product of modified duration and market value as weights.

TABLE 112

XYZ Insurance Company
CDN$
Evaluation Date: December 31, 2018

Description	Interest Rate	Maturity Date	Par Value	Market Value	Market Yield	Effective Market Yield	Modified Duration
BOND A	5.38%	18-11-50	320,000.00	371,314.76	4.45%	4.50%	16.47
BOND B	4.87%	18-06-42	8,844,000.00	10,420,050.06	3.75%	3.79%	15.07
BOND C	4.46%	08-11-41	235,000.00	252,477.15	3.98%	4.02%	14.87
BOND D	6.95%	24-10-41	805,000.00	874,269.61	6.25%	6.35%	11.91
BOND E	5.15%	15-11-40	75,000.00	85,366.32	4.20%	4.25%	13.93
BOND F	3.10%	18-06-40	2,055,000.00	2,638,690.57	1.59%	1.60%	17.02
BOND G	4.56%	26-03-40	1,080,000.00	1,321,528.41	3.15%	3.18%	14.67
BOND H	4.99%	30-10-37	200,000.00	247,497.12	3.34%	3.37%	13.28
BOND I	5.04%	21-09-29	200,000.00	275,976.38	1.50%	1.50%	9.30
BOND J	4.30%	08-09-29	355,000.00	531,274.16	0.04%	0.04%	9.73
BOND K	3.25%	18-12-23	25,000.00	25,948.14	2.56%	2.58%	5.41
BOND L	8.50%	22-11-23	200,000.00	224,468.00	6.00%	6.09%	4.65
BOND M	8.00%	27-03-22	6,134,000.00	6,360,609.90	6.97%	7.10%	3.50
BOND N	4.25%	30-05-21	3,270,000.00	2,893,628.26	8.18%	8.34%	3.06
BOND O	4.95%	10-03-20	4,800,000.00	4,947,188.78	3.48%	3.51%	2.04
BOND P	4.80%	18-06-20	378,000.00	405,969.44	1.72%	1.73%	2.34
BOND Q	5.56%	30-10-19	1,375,000.00	1,449,829.32	2.50%	2.51%	1.73
BOND R	4.95%	23-08-19	2,600,000.00	2,712,868.67	2.25%	2.26%	1.56
BOND S	4.54%	08-04-19	5,000,000.00	5,225,046.55	0.97%	0.98%	1.23
Total			37,951,000.00	41,264,001.60			
			Market value duration weighted average yield			3.72%	
			Estimated investment expense ratio			0.25%	
			Indicated discount rate net of expenses			3.47%	

There are also other more complex methods employed for estimating the investment yield, such as using a discounted cash flow model where the discount rate is the rate at which the

[209]CIA ASB, Actuarial Standards of Practice – Practice-Specific Standards for Insurance (2000), Present Values, page 2022. http://www.cia-ica.ca. (Effective April 15, 2017; Revised February 1, 2018.)

present value of claims cash flows equals the market value of the assets or where the discount rate is the internal rate of return for a group of assets whose cash flow matches claims payout.

INCOME STATEMENT

Appendix II of this publication shows the income statement for the total of all Canadian property/casualty insurance companies as reported by OSFI as at December 31,2018. The income statement measures the financial performance of the insurer over the accounting period. The net income for the period is equal to revenues less expenses and income taxes. For an insurance company, revenues and expenses are separately identified for insurance underwriting operations, investment operations, and other operations (mainly from subsidiaries, or affiliated or ancillary operations).

In the Canadian Annual Return, insurance revenue consists of net premiums written, which is equal to direct written premiums plus assumed written premiums, less written premiums ceded to reinsurers.

The change (opening unearned premiums less ending unearned premiums) in net unearned premiums is added to net written premiums resulting in net premiums earned. The net premiums earned item is the net underwriting revenue that is attributable to the accounting period under consideration. Other underwriting-related revenues are added, such as service charges, to generate total underwriting revenue.

Premium deficiency adjustments are required if the Appointed Actuary determines that the net policy liabilities in connection with the net unearned premium are larger than the total of the net unearned premium plus unearned commission liabilities less the deferred policy acquisition expense asset as recorded by the company. Incurred claims, claims adjustment expenses, acquisition expenses, general expenses, and any premium deficiency adjustments must be deducted from total underwriting revenue to derive the underwriting income or loss for the period under consideration.

Gross incurred claims and adjustment expenses are equal to gross claims and adjustment expenses paid during the period plus the change in gross unpaid claims (ending unpaid claims minus opening unpaid claims) and adjustment expenses calculated in accordance with AAP over the period. The reinsurers' share of claims and adjustment expenses is deducted from gross incurred claims and adjustment expenses to derive net claims and adjustment expenses. This calculation of net incurred claims and adjustment expenses is consistent with the same exposure period(s) as revenue, as defined above.

The categories of acquisition expenses shown in the income statement in the Canadian Annual Return are gross commissions, ceded commissions, taxes, and other acquisition expenses. For an insurer that distributes its products through the independent broker

network, commissions are typically the largest cost of acquiring the business. For those companies that have captive agents or that distribute their products directly to the consumer, the other acquisition expenses will be larger. The net commission expense is the gross (direct plus assumed) commission expense less any commission income received from ceding reinsurance – typically ceding commissions received on proportional reinsurance. The tax expense item is for taxes, other than income taxes, such as premium taxes, associated with writing insurance in Canada.

General expenses are items that do not relate directly to the acquisition of the business. This includes salaries, management fees, professional fees, occupancy costs, and information technology costs, among other items not directly related to the acquisition of the business.

Net investment income consists of investment income earned plus realized gains (losses), less investment expenses.

Underwriting income, net investment income, and other revenues and expenses are added to derive net income before income taxes and extraordinary items. Income taxes are separated into current income taxes and deferred income taxes.

Extraordinary items, net of income tax, are added to arrive at the net income or loss for the accounting period under consideration.

STATEMENT OF RETAINED EARNINGS

The statement of retained earnings illustrates the calculation of the retained earnings for the insurance company at the end of the reporting period. The retained earnings at the end of the reporting period are equal to the retained earnings at the beginning of the period plus the net income earned during the period less dividends and changes in reserves required plus any prior period adjustments.

RESERVES

This statement provides detail as to the reserves shown under the Equity section of the balance sheet. These reserves are appropriations of surplus for items such as earthquakes or nuclear events. These reserves have specific purposes and are required by OSFI in Canada.

STATEMENT OF COMPREHENSIVE INCOME AND ACCUMULATED COMPREHENSIVE INCOME

Total comprehensive income for the reporting period is equal to net income as reported on the statement of income (above) plus other comprehensive income (OCI). OCI comes from changes in unrealized gains (losses) on available-for-sale assets such as loans, bonds, and debentures and equities; derivatives designated as cash flow hedges; foreign currency translation; and share of OCI of subsidiaries, associates, and joint ventures. Items that are reclassified to earnings of gains (losses) are also included in OCI.

Accumulated other comprehensive income (AOCI) is the cumulative value of OCI or the total of unrealized gains on the above noted items that is included in the equity on the balance sheet.

STATEMENT OF CASH FLOWS

The statement of cash flows derives the value of cash and cash equivalents that are included as the cash item on the balance sheet at the end of the reporting period. Cash flow is derived from or used in operating activities, investing activities and financing activities. The cash flow during the year from these activities is added to the opening cash to derive the cash balance at the end of the year.

Operating activities relate to the operation of the business and include such items as:

- The net income generated during the year
- Changes in receivables
- Changes in unearned premiums and unpaid claims liabilities
- Recognized gains/losses in investments

The cash flow from investing activities is basically the net cash flow from the purchase of new investments and the proceeds from the sale of investments plus the amortization of premiums on investments.

The cash flow from financing activities is the net cash flow from increasing/repayment of borrowing plus the increase/redemption of shares less dividends to shareholders.

STATEMENT OF CHANGES IN EQUITY

This exhibit illustrates the change in equity across various classes of equity (e.g., share capital, retained earnings, accumulated other comprehensive income (“AOCI”)) resulting from various transactions or events such as issue of share capital, total comprehensive income for the year, and dividends.

NOTES TO FINANCIAL STATEMENTS

The notes to financial statements are an integral part of the financial statements. The notes provide significant detail on such important items as the basis of presentation, the basis of measurement, significant accounting policies and detailed explanations relating to some of the key financial statement items.

IMPACT OF REINSURANCE, INCLUDING COMMUTATIONS

Insurance companies may purchase reinsurance to limit their risk to loss from certain events. There are many different forms of reinsurance contracts that insurers can enter into, allowing each insurer to manage risk and capital in accordance with its own objectives. These

reinsurance contracts can be used to protect against multi-claim, catastrophic events, individual large losses, and poor experience across a line of business, among other uses, and thereby act to reduce volatility in insurance results.

In the event that a registered insurer cedes business to a non-registered insurer, the registered insurer is required to secure adequate collateral from the non-registered insurer to receive full capital credit for the cession of this business. The collateral must be secured through a Reinsurance Security Agreement providing the adequate level of creditor protection to the ceding insurer. This aspect is further discussed in Chapter 29.

Treaty reinsurance is a contract that applies to all or a portion of an insurance company's contracts covered under the term of the agreement, typically for a calendar year. These contracts generally are placed on an excess basis or on a proportional (quota-share) basis. In an excess treaty, the reinsurer responds to all claims during the treaty period excess of a specified threshold to a specified limit, e.g., automobile claims for $5 million excess of $5 million. In a proportional treaty, the reinsurer receives a set proportion of all premiums subject to the treaty, net of ceding commission, and in return pays the same proportion of all claims subject to the treaty. The ceding commission is paid by the reinsurer to the insurer in a proportional treaty to reimburse the insurer for policy acquisition expenses.

Facultative reinsurance differs from treaty reinsurance in that it relates to reinsurance against risks from certain policies written by an insurer. For example, an insurance company writes a very large commercial property exposure and wishes to limit its losses from this specific policy and hence purchases facultative reinsurance excess of its retained risk.

Reinsurance contracts impact the income statement and balance sheet of an insurance company. When an insurer purchases reinsurance, it pays a ceding premium, which reduces its earned premiums during the financial reporting period. It will also reduce its gross claims and adjustment expenses incurred by the reinsurer's share of claims and adjusting expenses and reduce its commission expense for any ceding commissions received. All of these items are reflected on the income statement.

Similarly, on the balance sheet of the Canadian Annual Return, there are two main reinsurance assets: unpaid claims and adjustment expenses recoverable from reinsurers, and unearned premiums recoverable from reinsurers. These assets reflect the share of the corresponding liabilities recorded by the insurer, which are recoverable from reinsurers.[210]

Table 113 charts a sample income statement and balance sheet for an insurance company prior to the application of reinsurance.

[210] This differs from the U.S. Annual Statement, where liabilities are shown net of reinsurance.

TABLE 113

No Reinsurance

Statement of Income		Balance Sheet	
		ASSETs	
Premium Written		Cash	$ 18,000
Direct	$ 340,000	Investments	
Assumed	$ –	Bonds and Debentures	$ 650,000
Ceded	$ –	Common Shares	$ 120,000
Net Premiums Written	$ 340,000	Receivables	
Decrease (increase) in Net Unearned Premiums	$ 7,000	Other Insurers	$ 20,000
Net Premiums Earned	$ 347,000	Other	$ 5,000
Gross Claims and Adjustment Expenses	$ 225,000	Recoverable from Reinsurers	
Ceded Claims and Adjustment Expenses	$ –	Unearned Premiums	$ –
Net Claims and Adjustment Expenses	$ 225,000	Unpaid Claims and Adjustment Expenses	$ –
Gross Commissions	$ 50,000	Other Assets	$ 5,000
Ceded Commissions	$ –		
Other Expenses	$ 42,500	TOTAL ASSETS	$ 818,000
Total Claims and Expenses	$ 317,500		
		LIABILITIES AND EQUITY	
Underwriting Income (Loss)	$ 29,500		
Net Investment Income	$ 40,000	LIABILITIES	
Net Income (Loss) before Income Taxes	$ 69,500		
Income Taxes	$ 24,325	Payables	
NET INCOME	$ 45,175	Other Insurers	$ 3,000
		Other	$ 2,000
		Unearned Premiums	$ 10,000
		Unpaid Claims and Adjustment Expenses	$ 500,000
		Other Liabilities	$ 3,000
		TOTAL LIABILITIES	$ 518,000
		EQUITY	
		Retained Earnings	$ 300,000
		TOTAL LIABILITIES AND EQUITY	$ 818,000

Table 114 shows the impact of reinsurance on a company's financial statements resulting from two simple reinsurance treaties: an excess of loss treaty and a proportional treaty. To simplify the example, we will ignore all impacts on investment income and income taxes, and, further, we will assume that the treaties run from January 1 to December 31.

For the excess of loss treaty example, it is assumed that the company will cede $20,000 in premiums and that it will recover $13,000 of losses from the reinsurer, of which $10,000 will be unpaid at the end of the year. The following chart illustrates the impact on the foregoing financial statements of such a treaty.

TABLE 114

Excess of Loss Treaty Reinsurance					
Statement of Income			Balance Sheet		
			ASSETS		
Premium Written			Cash	$	1,000
Direct	$	340,000	Investments		
Assumed	$	–	Bonds and Debentures	$	650,000
Ceded	$	20,000	Common Shares	$	120,000
Net Premiums Written	$	320,000	Receivables		
Decrease (increase) in Net Unearned Premiums	$	7,000	Other Insurers	$	20,000
Net Premiums Earned	$	327,000	Other	$	5,000
Gross Claims and Adjustment Expenses	$	225,000	Recoverable from Reinsurers		
Ceded Claims and Adjustment Expenses	$	13,000	Unearned Premiums	$	–
Net Claims and Adjustment Expenses	$	212,000	Unpaid Claims and Adjustment Expenses	$	10,000
Gross Commissions	$	50,000	Other Assets	$	5,000
Ceded Commissions	$	–			
Other Expenses	$	42,500	TOTAL ASSETS	$	811,000
Total Claims and Expenses	$	304,500			
			LIABILITIES AND EQUITY		
Underwriting Income (Loss)	$	22,500			
Net Investment Income	$	40,000	LIABILITIES		
Net Income (Loss) before Income Taxes	$	62,500			
Income Taxes	$	24,325	Payables		
NET INCOME	$	38,175	Other Insurers	$	3,000
			Other	$	2,000
			Unearned Premiums	$	10,000
			Unpaid Claims and Adjustment Expenses	$	500,000
			Other Liabilities	$	3,000
			TOTAL LIABILITIES	$	518,000
			EQUITY		
			Retained Earnings	$	293,000
			TOTAL LIABILITIES AND EQUITY	$	811,000

In the example above, the accounts impacted are highlighted, and it is assumed that ceded premiums and claims have flowed through cash.

In the proportional example, it is assumed that 15% of premiums and claims are ceded and that a ceding commission of 25% is paid to the insurer. It is also assumed that due to the large ceded premium that invested assets (bonds) would be reduced and that 100% of the claims are unpaid at the end of the year. Table 115 charts the impact on the foregoing financial statements of such a treaty.

TABLE 115

Proportional Reinsurance					
Statement of Income			Balance Sheet		
			ASSETS		
Premium Written			Cash	$	30,750
Direct	$	340,000	Investments		
Assumed	$	–	Bonds and Debentures	$	599,000
Ceded	$	51,000	Common Shares	$	120,000
Net Premiums Written	$	289,000	Receivables		
Decrease (increase) in Net Unearned Premiums	$	7,000	Other Insurers	$	20,000
Net Premiums Earned	$	296,000	Other	$	5,000
Gross Claims and Adjustment Expenses	$	225,000	Recoverable from Reinsurers		
Ceded Claims and Adjustment Expenses	$	33,750	Unearned Premiums	$	–
Net Claims and Adjustment Expenses	$	191,250	Unpaid Claims and Adjustment Expenses	$	33,750
Gross Commissions	$	50,000	Other Assets	$	5,000
Ceded Commissions	$	(12,750)			
Other Expenses	$	42,500	TOTAL ASSETS	$	813,500
Total Claims and Expenses	$	271,000			
			LIABILITIES AND EQUITY		
Underwriting Income (Loss)	$	25,000			
Net Investment Income	$	40,000	LIABILITIES		
Net Income (Loss) before Income Taxes	$	65,000			
Income Taxes	$	24,325	Payables		
NET INCOME	$	40,675	Other Insurers	$	3,000
			Other	$	2,000
			Unearned Premiums	$	10,000
			Unpaid Claims and Adjustment Expenses	$	500,000
			Other Liabilities	$	3,000
			TOTAL LIABILITIES	$	518,000
			EQUITY		
			Retained Earnings	$	295,500
			TOTAL LIABILITIES AND EQUITY	$	813,500

Again, accounts impacted are highlighted.

COMMUTATION OF CLAIMS

Commuting a claim is a process in which one party is relieved of its obligations in respect of the claim in exchange for a cash payment. This can happen between insurers and individual claimants, with insurers under financial stress or between insurers and reinsurers. This section addresses the commutation of claims between insurers and reinsurers.

Reinsurance contracts may contain a commutation clause, which requires the insurer to relieve the reinsurer of its obligations in exchange for a cash payment. These clauses are typically more common in contracts that cover long-tail liabilities, and the purpose is generally to allow the reinsurer to settle its obligations within a finite period.

The primary motivation for a reinsurer to commute is to bring certainty to its results; however, there are other benefits to the reinsurer associated with commutation, including capital relief and savings in claims adjusting and administrative costs. From an insurer's point of view, there can be a benefit from commutation if there is a concern in respect of the creditworthiness of the reinsurer – the receipt of cash extinguishes this risk. Insurers also will save administrative costs. Insurers, however, once they receive the cash payment will be subject to the risk of any future adverse loss experience in respect of the commuted liability and will have to hold capital for this risk.

Claims subject to commutation typically have expected cash flows that extend into the future. Therefore, the settlement of these claims requires that financial and non-financial considerations associated with the future cash flows be contemplated. Financial considerations can include items such as the amount and timing of cash flows, the discount rate to be used, cost inflation, the potential for volatility in cash flows and income tax. Non-financial considerations can include such items as regulatory involvement or legal court decisions of the claimant(s), current and future entitlements of the claimant(s), and unfavorable court decisions.

The commutation of a block of claims under a reinsurance agreement typically will involve the actuary for the insurer and the actuary for the reinsurer. Each actuary will be charged with estimating the present value of the future obligations. In estimating the present value of these obligations, the actuary must consider the following:

- The nominal or undiscounted value of future loss and LAE on reported and unreported claims
- The expected timing of the payout of the undiscounted loss and LAE
- Expected investment income on assets supporting these cash flows
- Income tax
- An appropriate risk load to provide for volatility

An example calculation of a commuted value of a portfolio is illustrated below.

TABLE 116

Estimate of Commuted Value of Claims
December 31, 2018

	Total	2019	2020	2021	2022	2023	2024	2025	2026
Estimated Payments in Period	$1,000,000	$350,000	$150,000	$125,000	$100,000	$100,000	$75,000	$50,000	$50,000
Payment Timing		0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5
Duration Matched Risk Free Rate		2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Present Value Claims Cash Flow	$950,223	$346,552	$145,610	$118,962	$93,304	$91,474	$67,261	$43,961	$43,099
Undiscounted Future Payments remaining		$1,000,000	$650,000	$500,000	$375,000	$275,000	$175,000	$100,000	$50,000
Required Margin		10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Target Capital Level at 200%		$200,000	$130,000	$100,000	$75,000	$55,000	$35,000	$20,000	$10,000
Risk Cost of Capital		9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Cost of Capital in Period		$18,000	$11,700	$9,000	$6,750	$4,950	$3,150	$1,800	$900
Timing		1	2	3	4	5	6	7	8
Discount Rate		2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Risk Margin	$53,225	$17,647	$11,246	$8,481	$6,236	$4,483	$2,797	$1,567	$768
Commuted Value	$1,003,448								

The starting point in estimating the commuted value is to estimate the undiscounted value of the liabilities to be commuted and the expected payout of the liabilities. This can be completed using various actuarial approaches. In Table 116, these liabilities are discounted at a risk-free rate corresponding to the average duration of each expected payment to obtain an estimate of discounted liabilities.

The risk margin is estimated based on the cost of holding capital for claims liabilities. In this case, it is assumed that required capital is based on a regulatory approach. For purposes of

this example, it is assumed that a margin of 10% of the claim liabilities is required and that the company must hold target capital equal to 200% of required capital.

The cost of holding capital is equal to the risk cost of capital multiplied by the regulatory capital. The risk cost of capital can be calculated in various ways, such as by calculating a weighted average cost of capital less the risk-free rate. The total risk margin is the present value of the annual cost of capital amounts discounted at the risk-free rate. The commuted value is calculated as the sum of the discounted value of the liabilities plus the risk margin.

PREMIUM LIABILITIES

The policy liabilities of a property/casualty insurance company at a particular valuation date consist of claims liabilities and premium liabilities. Claims liabilities provide for events that have happened prior to the valuation date, whether reported or not. Premium liabilities provide for events that will occur after the valuation date on policies in force on the valuation date, i.e., premium liabilities are the liabilities associated with the unexpired portion of an insurance or reinsurance contract.

Net premium liabilities are not separately identified on an insurer's balance sheet as a single item but rather are derived by considering the following items:

1. Net unearned premiums
2. Net loss and LAE costs (external and internal) after the valuation date on in-force policies
3. Expected excess of loss reinsurance costs after the valuation date on in-force policies
4. Costs of servicing the in-force policies
5. Provision for premium adjustments
6. Contingent commissions adjustments
7. Unearned reinsurance commissions
8. Deferred policy acquisition expenses (DPAE)
9. Premium deficiency

A property/casualty insurer typically records items 1, 6, 7, and 9 as liabilities on its balance sheet, item 8 is recorded as an asset on the balance sheet, and item 5 can be an asset or a liability. Items 2, 3, and 4 are not recorded on the insurer's financial statements but are used by the Appointed Actuary in testing the adequacy of the recorded premium liabilities.

In testing the adequacy of premium liabilities, the Appointed Actuary is comparing an estimate of ultimate costs associated with the unexpired portion of the policy against premium liabilities recorded by the company. The elements of this calculation are discussed below (on a net of reinsurance basis as the gross basis is identical with the exception of the items relating to reinsurance ceded):

A. Unearned premiums: These are the company's unearned premiums net of proportional reinsurance.

B. Excess of loss reinsurance costs: This is the expected costs of excess of loss reinsurance associated with unexpired policies. It is typically calculated by applying the subsequent year's excess of loss reinsurance rates to the unearned premium.

C. Expected losses and external LAE: This is the expected losses (net of all reinsurance) for the unexpired portion of the policy. In Canada this is calculated on an AAP basis, i.e., discounted plus a PfAD. There are different ways to calculate this, such as reviewing historical loss and LAE ratios on an AAP basis and selecting an expected AAP loss ratio or by forecasting expected loss and LAE cash flows and then discounting these and adding a PfAD.

D. Expected internal LAE: This provides for the internal costs associated with settling these claims. This is typically calculated by reviewing historical ratios of paid internal LAE to paid losses.

E. Expected maintenance expenses: This is the cost of servicing these in-force policies, other than internal claims handling. This would provide for policy changes, customer inquiries, etc.

F. Contingent commissions: Many insurers have contingent commission arrangements with brokers, which pay additional commissions if certain volume and/or profit targets are met, and this provides for the anticipated cost of these.

G. Policy Liabilities in Connection with Unearned Premium: The total of items B to F in Table 117 below are all expenses associated with the unearned premium. The net liability recorded by the company would be the unearned premium plus unearned commissions less the deferred premium acquisition expense (DPAE) asset.

H. Equity in Unearned Premium Reserve: This is the amount by which the unearned premiums exceed the policy liabilities in connection with unearned premium.

I. Unearned commissions: These are ceding commissions from proportional reinsurance that are not yet earned by the company.

J. Maximum net DPAE: This is the maximum DPAE asset that the company may record given the expected costs and the liability already recorded. If the company, on a provisional basis, has a higher amount recorded, it must be adjusted downward to a level at or below the amount flowing from this calculation.

K. In the event that this amount is negative, the company must record a premium deficiency reserve, which is an additional liability to ensure that all future costs are provided for.

These elements are illustrated below in Table 117 on both gross and net of reinsurance bases.

TABLE 117

ABC Insurance Company
Illustration of Test of Adequacy of Premium Liabilities ($000's)

	Gross of Reinsurance Basis			Net of Reinsurance Basis	
A.	Unearned Premiums	$ 100,000	A.	Unearned Premiums	$ 80,000
B.	Expected Losses and External L.A.E.	$ 75,000	B.	Excess of Loss Reinsurance Costs	$ 3,000
C.	Expected Internal L.A.E.	$ 4,500	C.	Expected Losses and External L.A.E.	$ 61,600
D.	Expected Maintenance Expenses	$ 2,000	D.	Expected Internal L.A.E.	$ 4,500
E.	Contingent Commissions	$ 50	E.	Expected Maintenance Expenses	$ 2,000
F.	Policy Liabilities in Connection with Unearned Premium (B+C+D+E)	$ 81,550	F.	Contingent Commissions	$ 50
G.	Equity in Unearned Premium Reserve (A-F)	$ 18,450	G.	Policy Liabilities in Connection with Unearned Premium (B+C+D+E+F)	$ 71,150
			H.	Equity in Unearned Premium Reserve (A-F)	$ 8,850
			I.	Unearned Commissions	$ 150
			J.	Maximum Net Deferred Acquisition Expense (MAX(A-G+I,0))	$ 9,000

A number of items above are included in the premium liability component of the actuarial opinion required by OSFI, as part of the Annual Return, as illustrated in Table 118. It is assumed in this case that the company booked $6.5 million as a DPAE asset, which is less than the $9 million calculated by the Appointed Actuary. Since the booked DPAE is less than the maximum DPAE calculated by the appointed actuary there is no need for a premium deficiency reserve.

TABLE 118

Premium Liabilities (CDN in 000s)	Carried in Annual Return (Column 1)	Actuary's Estimate (Column 2)
(1) Gross policy liabilities in connection with unearned premiums		81,550
(2) Net policy liabilities in connection with unearned premiums		71,150
(3) Gross unearned premiums	100,000	
(4) Net unearned premiums	80,000	
(5) Premium deficiency	–	–
(6) Other net liabilities	–	–
(7) Deferred policy acquisition expenses	6,500	
(8) Maximum policy acquisition expenses deferrable $[(4)+(5)+(9)]_{Col.\ 1} - (2)_{Col.\ 2}$		9,000
(9) Unearned commissions	150	

CHAPTER 29. FINANCIAL HEALTH OF PROPERTY/CASUALTY INSURANCE COMPANIES IN CANADA

RISK-BASED CAPITAL ADEQUACY FRAMEWORK

The Minimum Capital Test (MCT) for federally regulated property/casualty insurance companies and the Branch Adequacy of Asset Test (BAAT) for foreign property/casualty companies operating in Canada on a branch basis (foreign branch) were introduced in 2003 by the Office of the Superintendent of Financial Institutions (OSFI). To simplify their use, effective January 1, 2012, the MCT/BAAT guidelines were consolidated into one document, the MCT guideline. Under this guideline the MCT/BAAT ratios are also subject to an independent audit.

The minimum and supervisory target capital standards set out in the MCT guideline published by OSFI provide the framework within which the Superintendent assesses whether a property/casualty company, or a foreign branch, maintains adequate capital. Property/casualty companies are required, at a minimum, to maintain an MCT ratio of 100% (minimum capital ratio). OSFI has also set a "supervisory target capital ratio" of 150% to trigger early intervention and provide time for a company to take action to improve its MCT ratio, if it falls below the supervisory target.

OSFI expects companies to establish their own "internal target capital ratio" to reflect their own risk appetite and profile. An adequate internal target capital ratio provides the company with capacity to withstand unexpected losses beyond those covered by the minimum capital ratio. Notwithstanding that a property/casualty company or a foreign branch may meet these standards, the Superintendent has the authority to direct the property/casualty company to increase its capital or the foreign branch to increase the margin of assets over liabilities in Canada.

Typically, the Appointed Actuary is involved with company management in setting its internal target capital ratio. In setting it, the Appointed Actuary should consider the following, among other items:

- Nature of the company: A stock company has the ability to raise capital and thus may wish to hold enough capital to ensure that it stays above the supervisory target capital ratio (150%) but not so much that it cannot generate its required return on capital. A mutual company cannot raise capital and thus will typically wish to operate at a higher ratio.
- Size of the company: A smaller company or monoline company may have more volatile results and thus wish to hold more capital to ensure that it stays above the supervisory target capital ratio under most circumstances.

- Company's reinsurance program: Reinsurance is a form of capital support in that it can act to reduce the volatility in loss experience. In addition, when reinsurance reduces the net claims liability, the capital required will also be reduced.

- Investment philosophy: Certain investment approaches will require greater capital. That is, if a company does not match assets and liabilities or if a company holds a greater proportion of its investments in equities, more capital may be required.

- Competitive forces: If competing companies can raise capital quickly, by issuing stocks for example, their internal target can be relatively lower as it would be easy to raise funds in an event that drains the capital.

In simple terms, the Minimum Capital Test ("MCT") compares capital available to capital required. Detailed guidelines are issued by and available from OSFI.

CAPITAL AVAILABLE

Capital available generally represents the company's total equity adjusted for certain items. It is restricted to the following, subject to qualification requirements by OSFI:

- Category A: common equity including common shares, surplus, retained earnings, earthquake, nuclear and general reserves and Accumulated other comprehensive income (AOCI);
- Category B & C: instruments issued by the institution that meet certain criteria for the respective category.

Certain items are deducted from/adjusted within the total of capital available, such as:

- Interests in non-consolidated subsidiaries and associates, and joint ventures with more than a 10% ownership interest
- Loans to non-consolidated subsidiaries, associates, and joint ventures with more than a 10% ownership interest considered as capital
- Amounts due to/from unregistered reinsurers to the extent they are not covered by deposits or letters of credit held as security
- Self-insured retentions where no collateral has been received
- The earthquake premium reserve (EPR) not used as part of financial resources to cover earthquake risk exposure
- Deferred policy acquisition expenses associates with accident and sickness (A&S) business, other than those arising from commissions and premium taxes
- Accumulated other comprehensive income on cash flow hedges
- Accumulated impact of shadow accounting
- Goodwill and other intangible assets
- Deferred tax assets that are not eligible for the 10% capital factor

- Cumulative gains and losses due to changes in own credit risk on fair values financial liabilities
- Defined benefit pension fund assets and liabilities
- Investments in treasury stock
- Reciprocal cross holdings in the common shares of insurance, banking, and financial entities
- Adjustment to owner-occupied property valuations
- Accumulated net after-tax revaluation losses in excess of gains accounted for using the revaluation model
- Other assets, as defined by OSFI, in excess of 1% of total assets

No capital factor is applied to items that are deducted from capital available.

CAPITAL REQUIRED

The total capital required is determined as the sum of capital required for insurance risk, market risk, credit risk, and operational risk, less diversification credit (divided by 1.5). See below for calculations of the capital requirements and the target level for each of these risk components. Further details on each component of capital required follow.

INSURANCE RISK

MARGINS FOR UNPAID CLAIM AND PREMIUM LIABILITY

Insurance risk is the risk arising from the potential for claims or payouts to be made to policyholders or beneficiaries. This risk arises from the present value of losses being higher than the amounts originally estimated. Factors are applied to net unpaid claims (less PfAD) and net premium liabilities (less PfAD). The factors for unpaid claims vary by class of insurance and reflect the potential for variability in the estimates of these amounts, e.g., a 15% factor is applied to personal property claims, and a 25% factor is applied to liability claims. The risk factors for premium liabilities also vary by class of insurance, e.g., property claims have a 20% factor, and Auto – Liability claims have a 15% factor. However, the accident and sickness line of insurance has margins for unearned premiums and unpaid claims to take into account possible abnormal negative variations in actual requirements.

RISK MITIGATION and RISK TRANSFER - REINSURANCE

The factor to be applied to unpaid claims and unearned premiums recoverable from registered non-associated reinsurers is treated as a combined weight under the MCT and is set at 2.5%. The factor to be applied to unearned premiums and unpaid claims ceded to unregistered reinsurers is 20%. The resulting margin can be reduced to zero by letters of credit and non-owned deposits held as security.

SELF RETENTION

Self-Insured Retention represents the portion of a loss that is retained by the policyholder. Credit maybe taken with acceptable collateral such as letters of credit which are also subject to risk factors depending on the credit rating of the issuing organization.

CATASTROPHES

In Canada there is specific guidance on the amount of capital required for earthquake exposure and nuclear risk (if written). Components of capital are required for Earthquake Premium risk and Earthquake Reserves. These maybe reduced based on specific financial resources. The financial resources may take the form of capital & surplus, earthquake premium reserve, reinsurance coverage and prior approved capital financing.

MARKET RISKINTEREST RATE RISK

Interest rate risk is the risk of loss from changes in interest rates impacting interest-rate-sensitive assets and liabilities. Interest rate risk arises due to the volatility and uncertainty of future interest rates. Assets and liabilities whose value depends on interest rates are impacted; generally, this includes fixed income assets and discounted policy liabilities. The interest rate risk margin is the difference between the change in the value of interest-rate-sensitive assets and the change in the value of interest-rate-sensitive liabilities arising from a change in interest rates plus the change in the value of allowable interest rate derivatives (only simple derivatives such as interest rate futures, forwards, and swaps may be included).

Interest-rate-sensitive assets include the following:

- Term deposits and other short-term securities (excluding cash)
- Bonds and debentures
- Commercial paper
- Loans
- Mortgages
- Mortgage-backed securities and asset-backed securities
- Preferred shares
- Interest rate derivatives held for other than hedging purposes

Assets held in mutual funds and segregated funds that are interest-rate sensitive are to be included in interest-rate-sensitive assets. All interest-rate-sensitive assets that are held by the insurer are to be included, not just those backing liabilities.

Net unpaid claims and adjustment expenses and net premium liabilities (as determined in accordance with AAP) are considered to be the interest-rate-sensitive liabilities.

The interest rate risk margin is calculated as A – B + C where:

A. Estimated change in the value of the interest-sensitive asset portfolio for an interest rate change of X%
B. Estimated change in the value of the interest-sensitive liabilities for an interest rate change X%
C. Estimated change in the value of the allowable interest rate derivatives for an interest rate change X%

The same calculation is completed for an interest rate change of –X%. The interest rate risk margin is the greater of that resulting from a change of X% or –X%.

The change in the value of the interest-rate-sensitive assets and liabilities depends on the duration of the relevant assets and liabilities. Modified duration or effective duration may be used to calculate duration; however, the selected method must be used for all interest-rate-sensitive assets and liabilities and must be used consistently from year to year. The portfolio duration is calculated as a weighted average of the duration of the individual assets or liabilities comprising the portfolio. The dollar duration is the change in the asset or liability dollar value for a given change in interest rates.

The estimated change in the value of the interest rate assets is therefore calculated as duration of the asset portfolio multiplied by fair value of the asset portfolio multiplied by X%. The estimated change in the value of the interest rate liabilities is therefore calculated as duration of the liabilities multiplied by fair value of the liabilities multiplied by X%. A simple example (ignoring the impact of interest rate derivatives) follows:

Asset duration = 6 years
Fair value of asset portfolio = $500 million
X = 1.25%

Liability duration = 3 years
Fair value of liabilities = $350 million

Capital required = 6 * $500 million *.0125 – 3 * $350 million * .0125 = $24.375 million

FOREIGN EXCHANGE RISK

The foreign exchange risk margin is 10% of the greater of either the aggregate net long positions or the aggregate net short positions in each currency, adjusted by any effective allowable foreign exchange rate hedges.

The net open positions for each currency is the sum of:

- The net spot position (all asset items less all liabilities denominated in the currency under consideration, including accrued interest and accrued expenses if they are subject to exchange rate fluctuations);
- The net forward position, valued at current spot market exchange rates or discounted using current interest rates and translated at current spot rates;
- Guarantees that will be called and are irrecoverable;
- Any fully hedged net future income/expenses not yet accrued;
- Other items representing a profit or loss in foreign currencies.

To reduce the amount of net exposure, a carve-out may be used by P&C insurer with a net open long position in a given currency. This carve-out is equal to a short position of up to 25% of the liabilities denominated in the corresponding currency, to a maximum of zero.

A simple example for calculating the foreign exchange risk is as follows:

If a P&C insurer has $200 of U.S. assets and $100 of U.S. liabilities,
Net spot position = 200 – 100 = $100
Carve-out = 25% * $100 = 25
Foreign exchange risk margin = 10% * MAX ((net spot position – carve-out), 0)
= 10% * MAX ((100 – 25), 0)
= 10% * 75
= 7.5

EQUITY, REAL ESTATE, AND OTHER MARKET RISK EXPOSURES

Equity risk is the risk of economic loss due to fluctuations in the value of equity securities. A 30% risk factor is applied to investments in common shares and joint ventures in which a company holds less than or equal to 10% ownership interest, and to the market value of equity futures, forwards, and swaps.

Real estate risk is the risk of loss due to changes in the value of a property or in real estate investment cash flows. The risk factor for owner-occupied properties is 10%, and a 20% factor is applied to real estate held for investment purposes.

Other market risk exposures include those assets comprised in the “other assets” category, where a 10% risk factor applies.

CREDIT RISK

The risk of loss resulting from a counterparty’s potential inability to fully meet contractual obligations due to an insurer is defined as credit risk. This risk occurs anytime funds are extended, committed, or invested through actual or implied contractual agreements. Risk factors are as follows:

- Long-term obligations (term deposits, bonds, debentures, and loans) that are not eligible for a 0% risk factor have a risk factor between 0.25% and 18% depending on the rating and remaining term to maturity of the investment
- Short-term obligations (term to maturity less than 1 year) that are not eligible for a 0% risk factor have risk factors between 0.25% and 8% depending on the rating of the investment
- Risk factors for preferred shares are between 3% and 30% depending on the rating of the investment

STRUCTURED SETTLEMENTS, LETTERS OF CREDIT, DERIVATIVES, AND OTHER EXPOSURES

Capital required for structured settlements, letters of credit, derivatives, and other exposures are for counterparty risk not covered by the capital required for balance sheet assets. The capital required for these instruments is calculated as follows:

Capital required =
The credit equivalent amount of the instrument less collateral or guarantees
* Credit conversion factor (reflects the nature and maturity of the instrument)
* Capital factor (to reflect counterparty default risk).

The credit equivalent amount varies according to the type of instrument. The credit equivalent of a structured settlement is the current replacement cost of the settlement. For derivatives, it is the positive replacement cost plus an amount for potential future credit exposure.

OPERATIONAL RISK

Operational risk is the risk of loss arising from inadequate or failed internal processes, people and systems from external events. There are two risk drivers to determine the operational risk margin: capital required and premium volume. For the total capital required (before the

operational risk margin and diversification credit), an 8.5% risk factor is applied. The following risk factors apply to insurance premiums:

- 2.50% for all direct premiums and ceded premiums written arising from third party reinsurance
- 1.75% for assumed premiums written arising from third party reinsurance
- 0.75% for assumed and ceded premiums written arising from intra-group pooling arrangements

To account for the additional pressures on people and systems due to rapid growth, additional capital is required. Thus, a 2.50% risk factor is applied to the total amount of gross premiums written in the past 12 months above a 20% growth threshold compared to the gross premiums written for the same period in the previous year. Finally, to lessen the effect of the operational risk margin for companies that have high-volume/low-complexity business, a 30% cap is applied. This is calculated in relation to the total capital required before the operational risk margin and diversification credit.

DIVERSIFICATION CREDIT

A company is not likely to incur the maximum possible loss from each type of risk simultaneously since the losses arising across risk categories are not perfectly correlated. Therefore, a diversification credit can be applied so that the total capital for the credit, market, and insurance risk requirements is lower than the sum of the individual requirements for these risks.

The formula used to calculate the diversification credit is:

$$Diversification\ credit = A + I - \sqrt{A^2 + I^2 + 2 \times R \times A \times I}$$

A = asset risk margin = capital required for credit risk + capital required for market risk (e.g., interest rate, foreign exchange, equity, real estate, and other market risks)
I = insurance risk margin
R = correlation factor between A and I = 50%

MINIMUM CAPITAL TEST

MCT = Capital Available / Capital Required, where Capital Required =

[Insurance risk margin + Market risk margin + Credit risk margin + Operational risk margin – Diversification credit] / 1.5

FOREIGN COMPANIES

Foreign companies operating in Canada on a branch basis are required to maintain an adequate margin of assets over liabilities in respect of their business in Canada. The BAAT provides a framework, similar to the MCT, by which the regulator assesses the adequacy of assets of the branch.

The BAAT is similar to the MCT in that it compares net assets available to margin required. The net assets available are equal to the excess of assets vested in Canada less total net liabilities. The margin required is the sum of amounts required for the same items as in the MCT, e.g., assets, policy liabilities, catastrophes, etc., less the diversification credit (as in the MCT), divided by 1.5.

DYNAMIC CAPITAL ADEQUACY TESTING

Under federal regulation, the Appointed Actuary must investigate the insurer's financial condition. This is completed by way of Dynamic Capital Adequacy Testing (DCAT).

DCAT is a process of analyzing and projecting the trends of a company's financial condition, given its current financial and operating circumstances, its recent past, and its intended business plan under a variety of future scenarios. It allows the Appointed Actuary to inform company management of the likely implications of the business plan on capital and to provide guidance on the significant risks to which the company is exposed.

The principal goal of this process is to help measure capital adequacy by arming the company with the best information on courses of events that may lead to capital depletion and the relative effectiveness of alternative corrective actions. Furthermore, knowing the sources of threat, the company can strengthen the monitoring systems where it is most vulnerable and thus provide information on a continuous and timely basis.

In accordance with AAP, the DCAT process must include a base scenario and several plausible adverse scenarios. The CIA provides guidance as to the risk categories that must be examined for possible threats to capital adequacy. For property and casualty insurers, some of these risk categories include claim frequency and severity, inflation, premium increases and decreases, investment, reinsurance, and policy liabilities. However, the risk categories enumerated by the CIA are not necessarily the only ones to be examined because the circumstances of the insurer may result in the need to examine other risk categories.

The DCAT process generally consists of the following:

1. Development of a base scenario, which is typically derived from the company's business plan
2. Examination of the risk categories (mandatory or otherwise) to determine those that are relevant to the company circumstances

3. Stress-testing of the risk category in question for each relevant risk category
4. Selection of those scenarios requiring further analysis
5. Reporting on the results of the analysis

In the most general sense, solvency is the ability of an entity to honor its financial obligations. From the accounting viewpoint, solvency requires that assets equal or exceed liabilities and therefore that the total equity is non-negative. This is ascertained as of a specified date. Even though a balance sheet may show a corporate entity to be technically insolvent by this definition, legal insolvency is only determined through court or regulatory action to terminate the operations of that company. In contrast, the concept of capital adequacy envisioned by DCAT extends beyond the balance sheet at a specific date to the continued vitality of the organization.

Accordingly, in considering the solvency of insurance operations, the amount of and expected trends in surplus and other forms of available capital over the near future are of vital importance, especially in terms of risk profile of the company. It is necessary to consider the purposes of and needs for capital in relation to anticipated and possible events occurring after the statement date.

DCAT utilizes the regulatory formula for the capital adequacy standard. For insurers regulated under the Federal Insurance Companies Act or the Ontario Insurance Act, the minimum regulatory capital requirement for the purposes of the DCAT standard is based upon the MCT for a Canadian property/casualty insurer and the BAAT for a Canadian branch of a foreign property/casualty insurer. Should an insurer be subject to minimum capital requirements under other jurisdictions, the most restrictive requirement is used.

The company's financial condition is deemed satisfactory if, throughout the forecast period, it is able to meet all its future obligations under the base and all plausible adverse scenarios. In addition, under the base scenario, it must meet the target regulatory capital requirement. Otherwise the company's financial condition is deemed unsatisfactory.

DCAT analysis provides the Appointed Actuary with significant information about the financial condition of a company. The base scenario is in essence the business plan of the company throughout the forecast period. A review of the business plan should allow the Appointed Actuary to learn much about the company, including the following:

- Whether the company is growing or contracting through the forecast period and, if relevant, the level at which it is growing
- Whether the company is profitable throughout the period and whether the profits are sufficient to grow the capital base to support the growth of the company
- Planned changes in mix of business written by the company through the forecast period
- Planned changes to reinsurance programs, investment philosophies, expenses, etc.

Further, the adverse scenarios can reveal information about the risk management strategy employed by the company. For example, if a scenario that tests the impact of a change in interest rates has very little impact on the company, it is likely that the company has employed an asset/liability matching strategy to minimize the impact of this event. Adverse scenarios can also identify risks to which the company's financial condition is particularly sensitive, and the Appointed Actuary can work with management in developing mitigation strategies to manage these risks.

FINANCIAL CONDITION TESTING

Under federal regulation, the Appointed Actuary must investigate the insurer's financial condition. The financial condition of an entity refers to its prospective ability to meet its future obligations and is sometimes termed "future financial condition". The investigation is completed by way of Financial Condition Testing (FCT). The Appointed Actuary can supplement FCT with the use of other means, such as the own risk solvency assessment (ORSA).

Financial condition testing examines the effect of selected adverse scenarios on the insurer's forecasted capital adequacy. FCT is a process of analyzing and projecting the trends of a company's financial condition, given its current financial and operating circumstances, its recent past, and its intended business plan under a variety of future scenarios. It allows the Appointed Actuary to inform company management of the likely implications of the business plan on capital and to provide guidance on the significant risks to which the company is exposed.

The purpose FCT is to identify plausible threats to satisfactory financial condition, actions that would lessen the likelihood of those threats, and actions that would mitigate a threat if it materialized. FCT is one of several stress-testing processes that would fit within the insurer's overall risk management process. The FCT process allows management to understand implications the business plan has on capital and provides awareness of the significant risks to which the insurer is exposed

The FCT process generally consists of the following:

1. Development of a base scenario, which is typically derived from the company's business plan. The forecast period would be sufficiently long to be aligned with the risk emergence and the recognition of impacts and to capture the effect of management actions.
2. Development and analysis of the impact of adverse scenarios to determine those that are relevant to the company circumstances.
   The adverse scenarios may be single-risk or an integration thereof. Possible adverse scenarios include but not limited to risks associated with claims frequency and severity, policy liabilities, investment and reinsurance. They are categorized as solvency or going-concern. A solvency scenario is a plausible adverse scenario if it is credible and has a non-

trivial chance of occurring whereas a going-concern scenario is more likely to occur and less severe.

The approach used to determine adverse scenarios may be stochastic (based on statistical models), deterministic (based on judgement), or a combination of the two.

3. Identification and analysis of the effectiveness of corrective management actions to mitigate risks. Possible management actions include repricing products, reducing planned dividends and strengthening capital.
4. Reporting on the results of the analysis
5. An opinion by the Appointed Actuary. The financial condition is deemed satisfactory if throughout the forecast period, the following are met:
   - Under the solvency scenarios, the statement value of the insurer's assets is greater than the statement value of its liabilities;
   - Under going concern scenarios, the insurer meets the regulatory minimum capital ratio; and
   - Under the base scenario, the insurer meets its internal target capital ratio as determined by the ORSA.

DCAT utilizes the regulatory formula for the capital adequacy standard. The report need not include any explanation on the development and/or validity of the regulatory capital formula used. In most cases it will suffice to disclose the following:

- The applicable federal and/or provincial regulatory formula(s);
- For insurers subject to target capital requirements under multiple jurisdictions, the rationale for using the selected formula; and
- The target requirement used in the projections and the rationale.

FCT analysis provides the Appointed Actuary with significant information about the financial condition of a company. The base scenario is in essence the business plan of the company throughout the forecast period. A review of the business plan should allow the Appointed Actuary to learn much about the company, including the following:

- Whether the company is growing or contracting through the forecast period and, if relevant, the level at which it is growing;
- Whether the company is profitable throughout the period and whether the profits are sufficient to grow the capital base to support the growth of the company;
- Planned changes in mix of business written by the company through the forecast period;
- Planned changes to reinsurance programs, investment philosophies, expenses, etc.

Further, the adverse scenarios can reveal information about the risk management strategy employed by the company. For example, if a scenario that tests the impact of a change in interest rates has very little impact on the company, it is likely that the company has employed an asset/liability matching strategy to minimize the impact of this event. Adverse

scenarios can also identify risks to which the company's financial condition is particularly sensitive, and the Appointed Actuary can work with management in developing mitigation strategies to manage these risks.

INDUSTRY RESEARCH

Market-Security Analysis and Research, Inc.

Market-Security Analysis and Research, Inc. (MSA) is a Canadian analytical research firm that is focused on the Canadian insurance industry.[211] While MSA is not a rating agency, it publishes many reports and also offers a software tool that allows for comprehensive analysis of company and industry results in significant detail over a number of years. Canadian insurers are also monitored by major rating agencies such as A.M. Best, Standard & Poor's, and Moody's.

Individual company reports are presented by way of a number of exhibits. The first exhibit (Exhibit 1) is titled "Key Company Information." It presents key information about the company's type of license, ownership, and distribution category; identification of the appointed actuary and external auditor; and the name of the CEO or chief agent. There is additional information included in this exhibit for companies with publicly traded parents.

Key financial indicators are included in Exhibit 2. A number of regulatory tests and early warning indicators are included, such as:

- The MCT/BAAT ratio
- Profitability measures such as return on equity, return on revenue, return on assets after tax, and insurance return on net premium earned
- Liabilities as a percentage of liquid assets
- Net loss reserves to equity
- One-year loss development to equity
- Overall net leverage

The above measures are used by OSFI and other regulatory bodies as early warning solvency indicators. In its reports, MSA flags results that fall outside of OSFI's acceptable range. The MCT/BAAT ratios are OSFI's Risk-Based Capital adequacy assessment and are important measures of a company's financial position. If a company fails this test, it will likely be the subject of regulatory intervention. Often companies fail certain other ratios without being in distress; thus, the Appointed Actuary should consider results across all of the tests as a whole when making judgments about a company's financial position.

[211] MSA Research Inc. http://www.msaresearch.com/.

There are also supplementary ratios calculated to provide more summary-level information about the company, including:

- Investment yield (including realized capital gains)
- Change in net premium written
- Change in gross premium written
- Change in equity
- AOCI to equity
- Reinsurance recoverable to equity
- Net underwriting leverage ratio (ratio of net premiums written to equity)
- Two-year combined ratio
- Overall diversification score

PART VIII. THE FUTURE OF SAP

INTRODUCTION TO PART VIII

Regulation and financial reporting of insurance companies has evolved over time. The original FASB accounting standard for insurance entities (FAS 60) was discussed and developed in the 1970s and adopted in June 1982. The NAIC codified its statutory accounting principles, effective January 1, 2001. Today we see the implications of the work performed by the FASB and the IASB on insurance contracts accounting and the NAIC's Solvency Modernization Initiative (SMI). So, what is driving change today and where are we heading?

CHAPTER 30. THE FUTURE OF FINANCIAL REPORTING AND SOLVENCY MONITORING OF INSURANCE COMPANIES

THE NAIC AND THE FINANCIAL SECTOR ASSESSMENT PROGRAM

In Part VI. Differences from Statutory to other Financial/Regulatory Reporting Frameworks in the U.S., we discussed the reasons behind the development of new accounting standards for insurance contracts by the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB), . The National Association of Insurance Commissioners' (NAIC) Solvency Modernization Initiative was started in part because of pressure to conform to new and evolving international standards. In November 2008 at a G20 summit, during the global financial crisis, the G20 members agreed to undergo periodic peer reviews of their financial services regulatory regimes. This peer review process was developed by the International Monetary Fund and World Bank in response to the financial crisis in the late 1990s but had mainly been applied to developing countries. This peer review process is called the Financial Sector Assessment Program (FSAP).

The NAIC participated in the FSAP process during 2010 for the first time, and again in 2015. The assessment process benchmarked the U.S. insurance regulatory regime against the Insurance Core Principles (ICPs) developed and published by the International Association of Insurance Supervisors (IAIS). The results of the 2010 assessment were generally favorable but were based on the ICPs published in 2003. In October 2011, the IAIS published a revised set of ICPs, with amendments to certain of the ICPs published through November 2018. This revised set of ICPs were used to perform the 2015 FSAP review.

The 2015 FSAP concluded that while there were improvements since 2010, there remained difficulties in assessing the health of the U.S. insurance sector. In particular:

"Capital adequacy at legal entity level, measured by the regulators' risk-based capital (RBC) requirements, has increased since the crisis, and the number of companies breaching regulatory levels has declined. However, capital adequacy ratios are hard to interpret due to valuation rules, regulatory arbitrage via captives, and lack of regulatory capital adequacy measures at group level."

The report also noted that one area that still poses a challenge is ICP 14, Valuation. ICP 14 states the following:

"The context and purpose of the valuation of assets or liabilities of an insurer are key factors in determining the values that should be placed on them. This ICP considers the valuation requirements that should be met for the purpose of the solvency assessment of insurers within the context of IAIS risk-based solvency requirements that reflect a total balance sheet approach on an economic basis and address all reasonably foreseeable and relevant risks."

ICP 14 also states that "an economic value should reflect the prospective valuation of the future cash flows of the asset or liability allowing for the riskiness of those cash flows and the time value of money." Some may argue the current statutory valuation of property/casualty liabilities does not comply with this statement as it doesn't reflect the time value of money, except in limited circumstance, nor the underlying risk. The 2015 FSAP found that the U.S. insurance regulatory regime only partially observed this ICP. It recommended:

"Allowing for conservatism explicitly in a margin over current estimate would increase transparency. The explicit decomposition of reserves into a current estimate and a margin over current estimate allows assessment of the overall conservatism for different lines of products. This would allow a recalibration of the valuation standard for products where reserves are overly conservative or not sufficient."

COMFRAME, SOLVENCY II AND THE FEDERAL INSURANCE OFFICE

In addition to the revised set of ICPs, the IAIS has been developing a Common Framework for the Supervision of Internationally Active Insurance Groups, commonly referred to as ComFrame. The final framework was published in November 2019.

U.S. regulators have expressed concerns about the valuation approach under ComFrame which requires a margin over the current estimate for valuation purposes, also known as a GAAP plus valuation approach. U.S. regulator have instead proposed allowing an aggregation approach based on current local requirements in determining the required amount of group capital. As a compromise there will be a five year monitoring period to assess GAAP plus valuation and its effect on the prescribed capital requirement versus the aggregated approach proposed by U.S. regulators.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 created the Federal Insurance Office (FIO), which has several functions. The relevant functions are:

- To coordinate federal efforts and develop federal policy on prudential aspects of international insurance matters, including representing the U.S., as appropriate, in the IAIS and assisting the Treasury Secretary in negotiating covered agreements (bilateral or multilateral agreements entered into by the U.S. regarding prudential measures with respect to the business of insurance or reinsurance)
- To determine whether state insurance measures are preempted by covered agreements
- To consult with the states (including state insurance regulators) regarding insurance matters of national importance and prudential insurance matters of international importance

Effectively, this gives the FIO the power to act like a national regulator for purposes of negotiating the contents of ComFrame and its group capital requirement as it can preempt state law if the director of the FIO determines that the measure “results in less favorable treatment of a non-U.S. insurer domiciled in a foreign jurisdiction that is subject to a covered agreement than a U.S. insurer domiciled, licensed, or otherwise admitted in that State,” and state law “is inconsistent with a covered agreement.”

In addition to the FIO, Dodd-Frank gave the Federal government powers to regulate systemically important financial institutions (SIFI). What financial institutions are systemically important is determined by the Financial Stability Oversight Council, a body set up by Dodd-Frank to reduce the risk of any one company being “too big to fail.”

THE FUTURE

All the above activities by the NAIC, FASB, IASB, IAIS, and the FIO leave us with a very muddy picture of how insurance liabilities will be evaluated in the future. The common theme, though, is change, as each proposed framework differs from the current valuation of insurance liabilities today. Several scenarios could play out that would leave us with several different frameworks in place. Yet, any of these changes individually would have one common result: a greater need for actuaries to perform the additional calculations and explain the drivers of the results.

Glossary of Terms

Accepted Actuarial Practice (AAP)

The manner of performing work in accordance with rules and standards of practice as promulgated by the relevant actuarial body, e.g., American Academy of Actuaries in the U.S. or the Canadian Institute of Actuaries in Canada.

Accident year

The calendar year in which the accident occurs and/or the loss is incurred.

Accumulated other comprehensive income (AOCI)

The cumulative value of other comprehensive income or the total of unrealized gains and losses on (i) available-for-sale assets such as loans, bonds and debentures and equities; (ii) derivatives designated as cash flow hedges; (iii) foreign currency translation; and (iv) share of other comprehensive income of subsidiaries, associates, and joint ventures. AOCI is included on the balance sheet of a Canadian insurance company in equity.

Actuarial Opinion Summary (AOS)

A confidential document containing the appointed actuary's range of unpaid claim estimates and/or point estimate, as calculated by the appointed actuary, in comparison to the company's recorded reserves on both a net and gross of reinsurance basis.

Actuarial Standards Board (ASB)

"The Actuarial Standards Board (ASB) establishes and improves standards of actuarial practice. These Actuarial Standards of Practice (ASOPs) identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S."[212]

Actuarial Standards of Practice (ASOP)

"ASOPs are intended to provide actuaries with a framework for performing professional assignments and to offer guidance on relevant issues, recommended practices, documentation, and disclosure."[213]

Adjusting and other (A&O) expenses

One of the two components of loss adjustment expense, with defense and cost containment being the other. A&O generally include all expenses associated with the

[212] Actuarial Standards Board. "About the ASB." http://www.actuarialstandardsboard.org/aboutasb.asp , 2019.
[213] Actuarial Standards Board, Introduction to the Actuarial Standards of Practice, http://www.actuarialstandardsboard.org/pdf/asops/Introduction_113.pdf , October 2008.

adjusting and recording of insurance claims, other than those included with defense and cost containment expenses. According to the 2011 National Association of Insurance Commissioners Annual Statement Instructions Property/Casualty, A&O expenses are "those expenses that are correlated with claim counts or general loss adjusting expenses."[214]

Alien insurance company

A company doing business in the U.S. that is incorporated under the laws of a country outside the U.S.

Allocated loss adjustment expenses (ALAE)

Expenses that can be readily assigned to a specific claim, such as attorney fees.

A.M. Best Company

A global credit rating agency that serves the financial and health care service industries. In the insurance area, Best's Credit Ratings cover property/casualty, life, annuity, reinsurance, captive, title and health insurance companies as well as health maintenance organizations. A.M. Best covers thousands of insurance entities across the globe.

American Academy of Actuaries Committee on Property and Liability Financial Reporting (COPLFR)

"This committee monitors activities regarding financial reporting related to property and liability risks, reviews proposals made by various organizations affecting the actuarial aspects of financial reporting and auditing issues related to property and liability risks, and evaluates property and liability insurance and self-insurance accounting issues."[215]

Amortized cost

"The cost of bonds less the amortization of premium, or plus the accumulated accrual of discount, from the date of purchase to the date of valuation."[216]

Annual Statement

A filing made annually by an insurance company to each state insurance department in which it writes business. The filing is prepared under Statutory Accounting Principles and includes the company's financial statements and various supporting schedules and exhibits.

[214] 2018 NAIC Annual Statement Instructions Property/Casualty, page 225.
[215] American Academy of Actuaries, "Committee on Property and Liability Financial Reporting," http://www.actuary.org/committees/dynamic/COPLFR, 2019.
[216] Insurance Accounting & Systems Association, Property Casualty Insurance Accounting, 2006.

Appointed actuary

> "A qualified actuary appointed the Board of Directors, or its equivalent, or by a committee of the Board to render a statement of actuarial opinion. 'Qualified Actuary' is a person who is either:
>
> i. A member in good standing of the Casualty Actuarial Society, or
> ii. A member in good standing of the American Academy of Actuaries who has been approved as qualified for signing casualty loss reserve opinions by the Casualty Practice Council of the American Academy of Actuaries."[217]

Assets

> Resources obtained or controlled by a company as a result of past events that have a probable future economic benefit to the company.

Authorized control level (ACL)

> The level of Risk-Based Capital within which the state regulatory authority is authorized, but not required, to take control of an insurance company. This level is triggered when a company's total adjusted capital is between 70% and 100% of the ACL benchmark.

Authorized reinsurer

> A reinsurer that is licensed or approved to transact insurance business in a jurisdiction; an unauthorized reinsurer is not.

Balance sheet

> The financial statement that presents all of a company's assets and liabilities as of a specific point in time.

Branch Adequacy of Asset Test (BAAT)

> Guideline for federally regulated property/casualty insurance companies published by the Office of the Superintendent of Financial Institutions that provides the framework within which the Superintendent assesses whether a property/casualty company, or a foreign branch, maintains adequate capital.

Canadian Institute of Actuaries (CIA)

> The national organization of the Canadian actuarial profession.

[217] 2018 NAIC Annual Statement Instructions Property/Casualty, page 10.

Chartered Professional Accountants Canada (CPA Canada)

"Chartered Professional Accountants of Canada (CPA Canada) is one of the largest national accounting organizations in the world and is a respected voice in the business, government, education and non-profit sectors.

CPA Canada is a progressive and forward-thinking organization whose members bring a convergence of shared values, diverse business skills and exceptional talents to the accounting field. Domestically, CPA Canada works cooperatively with the provincial and territorial CPA bodies who are charged with regulating the profession. Globally, it works together with the International Federation of Accountants and the Global Accounting Alliance to build a stronger accounting profession worldwide. As one of the world's largest national accounting bodies, CPA Canada carries a strong influential voice and acts in the public interest."[218]

Cap

"An agreement obligating the seller to make payments to the buyer, each payment under which is based on the amount, if any, that a reference price, level, performance or value of one or more Underlying Interests exceed a predetermined number, sometimes called the strike/cap rate or price."[219]

Carryforward of net operating losses

An accounting practice used when an insurance company has net operating losses in one financial year and expects those losses to offset gains in the future, thereby reducing future tax liability.

Carrying value

An initial cost of an investment adjusted over time based on the reporting entity's share in the company's income.

Case development

Increases or decreases in the reserves for known claims as additional information becomes available.

Case incurred loss

The reported value of a known claim equal to the sum of paid losses plus case outstanding losses.

[218] Chartered Professional Accountants Canada, "About Chartered Professional Accountants of Canada (CPA Canada)," https://www.cpacanada.ca/en/the-cpa-profession/about-cpa-canada, 2019.
[219] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.

Case outstanding loss

The reserve for a known claim, or case reserve, generally established by the company's claims administrator(s)/handler(s) based either on the facts of the particular claim or based on formula.

Case reserves

See definition for case outstanding loss

Cash flow statement

A statement that presents a company's operations strictly from a cash perspective.

Ceded reinsurance premiums payable

Premiums that are owed to reinsurers relating to ceded reinsurance.

Ceding commission

A fee paid by the reinsurer to the insurance company (ceding company) for the reinsurance transaction. The fee is generally expected to reimburse the insurer for policy acquisition expenses.

Certified public accountant (CPA)

"Professional accountant who has passed the uniform CPA examination administered by the American Institute Of Certified Public Accountants, and has fulfilled the educational and work related experience requirements for certification."[220]

Claim frequency

The rate of claim occurrence, typically calculated as the ratio of claim counts to exposures.

Claim severity

The average cost of a claim, typically calculated as the ratio of losses to claim counts.

Claims-made policy

An insurance policy covering claims that arise on or after the policy retroactive date and are reported during the term of the policy. The retroactive date may be a date many years before the purchase of the policy. Therefore, a claims-made policy may cover claims made today that result from actions that occurred any time after the retroactive date.

[220] BusinessDictionary.com, Definitions, http://www.businessdictionary.com/definition/certified-public-accountant-CPA.html, 2019.

Collar

"An agreement to receive payments as the buyer of an Option, Cap or Floor and to make payments as the seller of a different Option, Cap or Floor."[221]

Common capital stock

A surplus account that is equal to the par value of common stocks that were issued.

Common stock

A type of stock holding that confers voting privileges and may pay a dividend, though the dividend is not guaranteed.

Commutation of ceded reinsurance

The agreement to fully settle all current and future liabilities associated with a reinsurance agreement for a set payment from the reinsurer.

Commuting a claim

A process in which one party is relieved of its obligations in respect of the claim in exchange for a cash payment.

Contingent commissions

Additional commissions paid by an insurance company to its broker if certain volume and/or profit targets are met.

Contingent liabilities

Amounts for which the insurance company may be held responsible but for which the balance is not currently determinable.

Credit risk

A risk that the counterparty will default (or not pay in whole or in part) and the estimation risk associated with amounts recorded for those receivables.

Defense and cost containment (DCC)

One of the two components of loss adjustment expense, with adjustment and other expense being the second. DCC generally includes defense, litigation and medical cost containment expenses, whether internal or external. According to the 2011 NAIC Annual Statement Instructions Property/Casualty, DCC expenses are "those that are correlated with the loss amounts."[222]

[221] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.
[222] Ibid., page 225.

Deferred acquisition costs (DAC)

An asset that is established under U.S. Generally Accepted Accounting Principles to defer the recognition of acquisition expenses to match the recognition of revenue of insurance companies.

Deferred tax assets (DTAs)

Expected future tax benefits related to amounts previously recorded in the statutory financial statements and not expected to be reflected in the tax return as of the reporting date.

Derivatives

Financial contracts between two parties for which the value is dependent upon the performance of other assets or variables. Examples include options, warrants, caps, floors, collars, swaps, forwards and futures.

Discount rate

The term commonly used when referring to the rate at which the present value of cash flows are calculated.

Discovery year

A calendar year in which a loss or damage is discovered.

Dividends received deduction (DRD)

In the case of corporate stockholders, DRDs are certain allowances that are made to reduce tax on dividends to avoid triple taxation when the Company in turn dividends earnings to their investors.

Dynamic Capital Adequacy Testing (DCAT)

A process of analyzing and projecting the trends of a company's financial condition given its current financial and operating circumstances, its recent past, and its intended business plan under a variety of future scenarios.

Earned but unbilled premiums

Estimated adjustments that will occur to the premium on policies where the actual amount of premium depends on an exposure measure (such as payroll) that is unknown until the end of the policy period.

Encumbrance

An impediment or claim on an asset made by a party that restricts the value of asset from complete use by the owner until the owner clears its obligation to the other party. An example is a lien on a property.

Equity method

A method under which investments in insurance company subsidiary, controlled and affiliated entities (SCAs) are recorded based on the reporting entity's proportionate share of audited statutory equity of the SCA's balance sheet, adjusted for any unamortized goodwill.

Excess treaty reinsurance

A contract under which the reinsurer responds to claims during the treaty period excess of a specified threshold to a specified limit.

Exhibit of Capital Gains (Losses)

An Annual Statement exhibit that shows the split of the gains (losses) between those gains (losses) that were realized on the sale or maturity of an asset and those due to impairments.

Exhibit of Net Investment Income

An Annual Statement exhibit that differentiates between the amount of income collected and the amount of income earned in the year and describes the deductions for investment expenses and other costs.

Facultative reinsurance

A reinsurance contract that is negotiated separately for each insurance policy that is reinsured. Facultative reinsurance is purchased for individual risks that are not covered, or not adequately covered, by the insurer's treaty reinsurance.

Fair value

The value at which an asset or liability could be bought or sold for in the open market.

Financial Accounting Standards Board (FASB)

A private organization providing authoritative accounting guidance for non-governmental entities. It has the responsibility of developing and establishing U.S. Generally Accepted Accounting Principles, with the Securities and Exchange Commission operating in an overall monitoring role over the application of the accounting standards by public companies.

Floor

"An agreement obligating the seller to make payments to the buyer, each payment under which is based on the amount, if any, that a predetermined number, sometimes

called the strike/floor rate or price exceeds a reference price, level, performance or value of one or more Underlying Interests."[223]

Forward

"An agreement (other than a Future) to make or take delivery of, or effect a cash settlement based on, the actual or expected price, level, performance or value of one or more Underlying Interests."[224]

Future

"An agreement traded on an exchange, Board or Trade or contract market to make or take delivery of, or effect a cash settlement based on, the actual or expected price, level, performance or value of one or more Underlying Interests."[225]

General expenses

Insurance company operating and administrative expenses other than those that relate directly to the acquisition of the business or ongoing policy maintenance costs incurred by an insurance company.

General Interrogatories

A series of questions that the insurance company is required to respond to within its Annual Statement.

Generally Accepted Accounting Principles (GAAP)

An accounting framework that provides a consistent set of rules under which publicly traded and privately held companies report their financial transactions.

Goodwill

An intangible asset that results from the excess of the price paid for an acquired entity and its book value (for U.S. SAP) or fair value (for U.S. GAAP). It represents the value perceived by the buyer in the company for things like customer relationships or trade name, which are not physical or material assets but can be bought or sold due to their relevance to the company's future profitability.

Governmental Accounting Standards Board (GASB)

"…the independent private-sector organization…, that establishes accounting and financial reporting standards for U.S. state and local governments that follow generally accepted accounting principles (GAAP)."[226]

[223] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.
[224] Ibid., page 373.
[225] Ibid., page 374.
[226] GASB, "About the GASB" https://www.gasb.org/jsp/GASB/Page/GASBSectionPage&cid=1176168081485, 2019.

Income statement

A statement that describes a company's gain or loss in net income during a specific time period.

Incurred but not reported (IBNR)

The reserve for claims that have been incurred but not yet reported to the insurance company. IBNR includes a provision for development on known claims ("case development"), a provision purely for those claims that are incurred but not yet reported to the insurance carriers ("pure IBNR"), and reopened claims.

Insurance Expense Exhibit (IEE)

An Annual Statement exhibit that enables regulators to dive deeper into an insurance company's profitability by examining profitability by line of business on a direct and net of reinsurance basis.

Insurance Regulatory Information System (IRIS)

A collection of analytical solvency tools and databases designed to provide state insurance departments with an integrated approach to screening and analyzing the financial condition of insurers. IRIS is used to assist each state in prioritizing which companies need additional regulatory attention.

Insurance contract

A contract under which one party (the insurer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder.

Insurance or underwriting risk

The risk of an insurance company associated with issuing insurance policies.

Intercompany pooling

A common arrangement among companies in a group in which each participant fully cedes all of its business to the lead insurance company of the pool, and then each participant assumes back a specific percentage of the total.

Interest rate risk

The risk of loss from changes in interest rates impacting interest-rate-sensitive assets and liabilities.

Internal Revenue Service (IRS)

The U.S. government agency that is responsible for establishing tax laws and collecting taxes.

Internal Target Capital Ratio

The ratio determined by an insurance company intended to provide capacity to withstand unexpected losses beyond those covered by the minimum capital ratio. Canadian property and casualty companies are asked by the Office of the Superintendent of Financial Institutions to establish their own internal target capital ratio.

International Accounting Standards Board (IASB)

"The Board is an independent group of experts with an appropriate mix of recent practical experience in setting accounting standards, in preparing, auditing, or using financial reports, and in accounting education…Board members are responsible for the development and publication of IFRS Standards including the IFRS for SMEs Standard. The Board is also responsible for approving interpretations of IFRS Standards as developed by the IFRS Interpretations Committee (formerly IFRIC)."[227]

International Financial Reporting Standards (IFRS)

The accounting standards promulgated by the International Accounting Standards Board typically used for financial reporting by companies licensed in countries outside of the U.S.

Investment affiliate

An affiliate, other than a holding company, engaged or organized primarily to engage in the ownership and management of investments for the insurer. Investment affiliates exclude entities that manage funds of organizations other than the parent.

Letters of credit

Issued by a bank to guarantee that payment will be made by a borrower to the lender. In the case of reinsurance transactions, a letter of credit guarantees that the reinsurer will be able to meet its obligations to the reinsured. The bank typically charges for this guarantee as a percent of its value. The percentage rate generally rises during periods of uncertain economic times.

Liability

An obligation that the company must fulfill based on past events or transactions that will require the use of monetary resources.

[227] IFRS Foundation, "About the International Accounting Standards Board (Board)," https://www.ifrs.org/groups/international-accounting-standards-board/, 2019.

Liquidity/Illiquidity premium

In a situation when the ability to readily trade the asset results in a lower discount rate being applied to the tradable asset's future cash flows than that of the privately held asset, the difference in the discount rates is the liquidity/illiquidity premium for the privately held asset.

Loss adjustment expense (LAE)

Expenses associated with the handling of a claim from the time it is reported to the insurance company until the time it is closed. LAE includes allocated loss adjustment expenses (ALAE) and unallocated loss adjustment expenses (ULAE). The National Association of Insurance Commissioners currently uses the defense and cost containment (DCC) and adjusting and other (A&O) expenses to comprise the two forms of LAE. While LAE in total is equivalent under either the ALAE/ULAE or DCC/A&O definitions, it is the segregation of expenses between the two that differs. DCC generally includes defense, litigation and medical cost containment expenses, whether internal or external, and A&O includes all expenses associated with adjusting and recording policy claims, other than those included with DCC.

Mandatorily convertible security

A security that is required to be exchanged for another type of security at a specified price that differs from the market price at the time of conversion.

Market-Security Analysis & Research (MSA)

A Canadian analytical research firm that is focused on the Canadian insurance industry.

Market valuation approach

A valuation approach in which an investment by an insurance company in subsidiary, controlled and affiliated entities (SCAs) is based on the market value of the SCA, adjusted for the reporting entity's ownership percentage.

Maximum net deferred policy acquisition expense (DPAE)

A ceiling to the amount of the DPAE asset that a property/casualty insurance company may record on its financial statements in Canada.

Minimum capital ratio

Minimum Capital Test (MCT) ratio of 100%.

Minimum capital requirement (MCR)

The smallest level of capital at which a company would be permitted to operate in Canada per the Office of the Superintendent of Financial Institutions.

Minimum capital test (MCT)

Guideline for Federally Regulated Property and Casualty Insurance Companies published by the Office of the Superintendent of Financial Institutions that provides the framework within which the Superintendent assesses whether a property/casualty company, or a foreign branch, maintains adequate capital. MCT compares capital available to capital required.

Mortgage-backed security (MBS)

"Debt instrument secured by a mortgage or a pool of mortgages (but not conveying a right of ownership to the underlying mortgage). Unlike unsecured securities, they are considered 'investment grade,' and are paid out of the income generated by principle and interest payments on the underlying mortgage. It is a type of mortgage derivative."[228] We note that there can be MBS securities designated by the NAIC at 3 through 6, which would be equivalent to a below investment grade designation for bonds.

National Association of Insurance Commissioners (NAIC)

Serves as an organization of state regulators that facilitates and coordinates governance of insurance companies across the U.S.

NAIC Model Investment Law

Allows for two alternative types of investment guidelines:

1. The defined limit system of investment guidelines follows a rule-based approach and prescribes specific quantitative limits for the invested assets that a company may hold.
2. The prudent person system of investment guidelines follows a principles-based approach and requires an insurance company to develop its own investment guidelines.

NAIC's Securities Valuation Office (SVO)

"The National Association of Insurance Commissioners' Securities Valuations Office (SVO), one of three groups within the Capital Markets & Investment Analysis Office, is responsible for the day-to-day credit quality assessment of securities owned by state regulated insurance companies. Insurance companies report ownership of securities

[228] BusinessDictionary.com, Definitions, http://www.businessdictionary.com/definition/mortgage-backed-security.html, 2019.

to the Capital Markets and Investment Analysis Office when such securities are eligible for filing on Schedule D, DA or BA of the NAIC Financial Statement Blank."[229]

Net income/Net loss

The difference between the amount of the revenues and expenses during the period. It is referred to as net income if it is positive and net loss if it is negative.

Net investment income earned

Interest and dividends received on investment assets held over the course of the year, net of investment expenses including any associated taxes.

Net realized capital gain (loss)

Income received related to changes in the value of investment assets that are held under U.S. SAP, net of any associated taxes.

Nonadmitted assets

Assets that are not recognized by state insurance departments in evaluating the solvency of an insurance company for statutory accounting purposes.

Notes to Financial Statements

Qualitative and quantitative disclosures made by a company to further explain the balances shown in its financial statements.

Off-balance sheet and other items

Amounts that are not recorded by the insurance company in its statutory financial statements yet still represent assets and/or potential liabilities of the insurance company and therefore expose the company to risk.

Office of the Superintendent of Financial Institutions (OSFI)

The organization that supervises all federally regulated financial institutions, monitors federally regulated pension plans and provides actuarial advice to the Government of Canada.

Option

"An agreement giving the buyer the right to buy or receive, sell or deliver, enter into, extend or terminate, or effect a cash settlement based on the actual or expected price, level, performance or value of one or more Underlying Interests."[230]

[229] Per the description of the Securities Valuation Office on the NAIC and The Center for Insurance Policy and Research website, http://www.naic.org/svo.htm, 2019.
[230] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.

Other comprehensive income (OCI)

Changes in unrealized gains and losses on (i) available for sale assets such as loans, bonds and debentures and equities; (ii) derivatives designated as cash flow hedges; (iii) foreign currency translation; and (iv) share of OCI of subsidiaries, associates and joint ventures. OCI is required by U.S. GAAP and International Financial Reporting Standards.

Overdue authorized reinsurance

Reinsurance for which the amount of paid loss and loss adjustment expense recoverable is more than 90 days past due for reasons other than dispute between the insurance company and the reinsurer.

Own risk self-assessment (ORSA)

The entirety of the processes and procedures employed to identify, assess, monitor, manage and report the short- and long-term risks a (re) insurance undertaking faces or may face and to determine the own funds necessary to ensure that the undertaking's overall solvency needs are met at all times.

Paid losses

Amounts paid by the insurance carrier for insured claims.

Par value

An amount set by the issuer of a stock when the stock is initially offered, which serves as a minimum value for which the stock can be sold in that initial offering.

Policyholder dividend

A return to the policyholder of a portion of the premium that was originally paid by the policyholder. There are typically state requirements that must be met for a company to pay dividends.

Preferred stock

A stock holding that does not confer voting privileges but usually provides a guarantee on dividends to be paid and usually has preference to common stock in the event of liquidation.

Premium deficiency reserve

A reserve that must be recorded when the unearned premium of in-force business is not sufficient to cover the losses, loss adjustment expense and other expenses that will arise when that premium is earned.

Proportional treaty

A contract under which the reinsurer receives a set proportion of all premiums subject to the treaty, net of ceding commission, and in return pays the same proportion of all claims subject to the treaty.

Protected cell company

A company that comprises individual cells, each with its own assets, liabilities and equity, but that also has access to a part of the company's overall capital. The liability to each cell is limited such that creditors to one cell cannot look to another cell or the company as a whole for assets.

Provision for adverse deviation (PfAD)

A provision required in Canada for adverse deviation in a company's loss reserves determined by increasing the value of variables used in the reserve estimation process.

Provision for reinsurance

A penalty for reinsurance recoverables that may not be collectible. The amount of this provision is a reduction to surplus. This penalty applies to unauthorized reinsurers that do not provided full collateral, that are slow to pay or that have disputed amounts owed to the ceding company, as well as the authorized reinsurers that are slow to pay or that have disputed amounts that are owed to the ceding company.

Regulation S-X

The Securities and Exchange Commission's regulation that contains general instructions to all companies around the composition and presentation of financial statements

Reinsurance contract

Oftentimes considered insurance for insurance companies, a contract under which one party (the insurer or reinsured) transfers risk to another party (the reinsurer) to protect the insurer (reinsured) from financial loss.

Replication (synthetic asset) transaction

A derivative transaction entered into in conjunction with other investments to reproduce the investment characteristics of otherwise permissible investments.

Report year

A calendar year in which losses are reported.

Reported loss

Amount of paid plus case outstanding losses incurred by an insurance company. It represents the dollar value of loss known to the insurance company. Reported loss is synonymous with the term case incurred loss.

Reserve risk

The risk that a reporting entity's loss and loss adjustment expense reserves will develop adversely.

Retroactive date

The date specified in a claims-made insurance policy that defines the first day on which incurred losses are covered under the policy.

Retroactive reinsurance

Reinsurance that is purchased for liabilities that occurred in the past (i.e., prior to the effective date of the reinsurance policy).

Revenue offset

A reduction in earned premium to account for a lack of deferred acquisition costs.

Review date

The valuation date through which material information known to the actuary is included in forming the reserve opinion.

Risk-Based Capital (RBC)

A solvency framework developed by the National Association of Insurance Commissioners from which an amount of capital is determined formulaically based on the application of specified factors to an insurance company's admitted assets and liabilities recorded as of year-end. The calculated amount, or RBC, is compared to the total adjusted capital for the insurance company at year-end to determine the level, if any, of company or regulatory action required from a solvency perspective.

Risk-Based Capital ratio (RBC ratio)

The ratio of total adjusted capital to the authorized control level benchmark computed under the National Association of Insurance Commissioners RBC framework.

Schedule A

A schedule within an Annual Statement that provides information on real estate directly owned by the insurance company.

Schedule B

A schedule within an Annual Statement that provides information on mortgage loans owned by the insurance company that are backed by real estate.

Schedule BA

A schedule within an Annual Statement that provides information on other long-term invested assets owned by the insurance company. These are assets not included in any of the other invested asset schedules, such as real estate that is not owned directly by the insurance company and therefore excluded from Schedule A.

Schedule D

A schedule within an Annual Statement that provides information on bonds and stocks owned by the insurance company.

Schedule DA

A schedule within an Annual Statement that provides information on short-term investments owned by the insurance company. The schedule includes all investments whose maturities (or repurchase dates under repurchase agreement) at the time of acquisition were one year or less except those defined as cash or cash equivalents in accordance with SSAP No. 2R, Cash, Cash Equivalents, Drafts and Short-term Investments.

Schedule DB

A schedule within an Annual Statement that provides the number of contracts for each derivative and the notional amount, which represents the number of units of the underlying asset that are involved.

Schedule DL

A schedule within an Annual Statement that provides information on securities lending reinvested assets.

Schedule E

A schedule within an Annual Statement that provides information on the insurance company's cash and cash equivalents.

Schedule F

A schedule within an Annual Statement that provides information on an insurance company's assumed and ceded reinsurance transactions.

Schedule P

A schedule within an Annual Statement that provides loss and loss expenses reserves gross and net and also breaks down the total reserves by line of business and accident year.

Schedule P interrogatories

A series of questions that the insurance company is required to answer to provide further insight into the information reported in Schedule P.

Schedule T

A schedule within an Annual Statement that provides an allocation of its contents by U.S. state (50) and the District of Columbia, as well as five U.S. territories (American Samoa, Guam, Puerto Rico, U.S. Virgin Islands and Northern Mariana Islands), Canada, and "aggregate other alien" territories.

Securities and Exchange Commission (SEC)

The authoritative body for establishing accounting and reporting standards for publicly traded companies in the U.S.

Solvency capital requirement (SCR)

An amount of capital required to limit the probability of ruin over the forthcoming year to 0.5%.

Statement of Actuarial Opinion (SAO)

The opinion of a qualified actuary on the reasonableness of the loss and loss adjustment expense reserves recorded by a property/casualty insurance company as of December 31 each year.

Statement of cash flows

A statement that shows cash inflows and outflows from a company's operations, investments, financing and other sources, the net value of which is included as the value of cash and cash equivalents (and short-term investments under U.S. SAP) that is shown on the on the balance sheet at the end of the reporting period.

Statement of Changes in Equity exhibit

A statement included within the financials of a Canadian insurance company Illustrating the change in equity across the various classes of equity (e.g., share capital, retained earnings, available for sale financial assets) resulting from various transactions or events such as issue of share capital, total comprehensive income for the year, dividends, etc.

Statement of retained earnings

A statement included within the financials of a Canadian insurance company that provides the calculation of the retained earnings for the insurance company at the end of the reporting period.

Statutory Accounting Principles (SAP)

The accounting framework that all U.S. insurance companies are required to report under for state regulatory purposes: "accounting principles or practices prescribed or permitted by an insurer's domiciliary state"[231]

Structured settlements

A situation where an insurance company settles a claim by purchasing an annuity on behalf of a claimant.

Surplus (policyholders' surplus)

The difference between assets and liabilities is generally referred to as net worth, and, in the specific case of an insurance company under statutory accounting, it is referred to as surplus.

Surplus aid

An amount of enhancement to surplus in the current period as a result of ceding commission that has been taken into income on its ceded unearned premium.

Surplus ratio

A ratio of mean policyholders' surplus to the sum of mean net loss and loss adjustment reserves, mean net unearned premium reserves and current year net earned premiums, in total for all lines combined.

Swap

"An agreement to exchange or net payments at one or more times based on the actual or expected price, level, performance or value of one or more Underlying Interests or upon the probability occurrence of a specified credit or other event."[232]

Tabular reserves

Indemnity reserves that are calculated using discounts determined with reference to actuarial tables that incorporate interest and contingencies such as mortality, remarriage, inflation or recovery from disability applied to a reasonably determinable payment stream. This definition does not include medical loss reserves or any LAE reserves.

[231] NAIC, Accounting Practices and Procedures Manual, Volume I, March 2019, page P-2.
[232] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.

Tail coverage
: Coverage issued as an endorsement to a claims-made policy that covers claims incurred after the retroactive date but reported to the insurer subsequent to the claims-made policy expiration date.

Tax-basis earned premium
: Earned premium adjusted for a revenue offset.

Tax-basis incurred losses and expenses
: Statutory calendar-year incurred paid losses plus the change in discounted loss reserves.

Total comprehensive income
: Net income as reported by Canadian insurance companies on the Statement of Income plus other comprehensive income.

Treaty reinsurance
: A reinsurance contract that applies to all or a portion of an insurance company's policies written during the term of the reinsurance agreement, typically a calendar year.

Unallocated loss adjustment expenses (ULAE)
: Expenses associated with the handling of claims that are not generally assigned to a particular claim, such as salaries for adjustors and utility costs.

Underwriting income
: Earned premium minus loss and LAE incurred and other underwriting expenses incurred.

Unearned commissions
: Ceding commissions from reinsurance that are not yet earned by the insurance company.

Unearned premiums
: The premium that corresponds to the time period remaining on an insurance policy prior to expiration.

Unpaid loss (or loss reserve)
: Amount of case outstanding plus incurred but not reported reserves. It represents the remaining amount expected to be paid on claims incurred by the insurance company.

Value at risk

"Largest loss likely to be suffered on a portfolio position over a holding period (usually 1 to 10 days) with a given probability (confidence level). VAR is a measure of market risk, and is equal to one standard deviation of the distribution of possible returns on a portfolio of positions. "[233]

Warrant

"An agreement that gives the holder the right to purchase an underlying financial instrument at a given price and time or at a series of prices and times according to a schedule or warrant agreement."[234]

Written premium risk

A risk that future business written by the company will be unprofitable.

Yield curve

"Graph used typically to show yields for different bond maturities and used for determining the best value in bonds and as an economic indicator. Positive (upward sloping) curve indicates an expanding economy whereas a flat or negative (downward sloping) curve indicates a slowing or contracting economy."[235]

[233] BusinessDictionary.com, Definitions, http://www.businessdictionary.com/definition/value-at-risk-VAR.html, 2019.
[234] 2018 NAIC Annual Statement Instructions Property/Casualty, page 373.
[235] BusinessDictionary.com, Definitions, http://www.businessdictionary.com/definition/yield-curve.html, 2019.

APPENDICES

APPENDIX I. FICTITIOUS INSURANCE COMPANY

EXCERPTS FROM THE 2018 ANNUAL STATEMENT FOR FICTITIOUS INSURANCE COMPANY

ANNUAL STATEMENT

OF THE

FICTITIOUS INSURANCE COMPANY

Of

Sunny City
in the state of Florida

* * Selected Excerpts ONLY * *

to the Insurance Department
of the state of Florida

For the Year Ended
December 31, 2018

2018

ASSETS

		Current Year			Prior Year
		1	2	3	4
		Assets	Non-Admitted Assets	Net Admitted Assets (Cols. 1 - 2)	Net Admitted Assets
1.	Bonds (Schedule D)	58,676,000	0	58,676,000	58,861,000
2.	Stocks (Schedule D):				
	2.1 Preferred Stocks	34,000	0	34,000	35,000
	2.2 Common Stock	19,408,000	68,000	19,340,000	19,081,000
3.	Mortgage Loans on real estate (Schedule B):				
	3.1 First Liens	238,000	0	238,000	245,000
	3.2 Other than first liens	7,000	0	7,000	0
4.	Real Estate (Schedule A):				
	4.1 Properties Occupied by the company (less $.....0 Encumbrances)	453,000	0	453,000	472,000
	4.2 Properties held for the production of income (less $.....0 Encumbrances)	3,359,000	0	3,359,000	3,274,000
	4.3 Properties held for sale (less $.....0 encumbrances)	33,000	0	33,000	0
5.	Cash ($.....153,000 Sch. E-Part 1), cash equivalents ($.....0 Sch. E-Part 2) and short-term investments ($.....829,000, Sch DA)	983,000	0	983,000	1,233,000
6.	Contract loans (Including $0 premium notes)	0	0	0	0
7.	Derivatives (Schedule DB)	0	0	0	0
8.	Other invested assets (Schedule BA)	4,726,000	98,000	4,628,000	4,405,000
9.	Receivables for securities	0	0	0	0
10.	Securities lending reinvested collateral assets (Schedule DL)	79,000	0	79,000	183,000
11.	Aggregate write-ins for invested assets	(5,000)	0	(5,000)	(5,000)
12.	Subtotal, cash and invested assets (Lines 1 to 11)	87,991,000	166,000	87,825,000	87,784,000
13.	Title plants less $...0 charged off (For Title insurers only)	0	0	0	0
14.	Investment income due and accrued	726,000	0	726,000	750,000
15.	Premiums and Considerations:				
	15.1 Uncollected premiums and agent's balances in course of collection	2,870,000	244,000	2,626,000	2,866,000
	15.2 Deferred premiums, agents balances and installments booked but deferred and not yet due (Including $... 60,000 earned but unbilled premium)	5,153,000	39,000	5,114,000	4,927,000
	15.3 Accrued retrospective premium ($...0) and contracts subject to redetermination ($...0)	254,000	4,000	250,000	263,000
16.	Reinsurance:				
	16.1 Amounts recoverable from reinsurers	426,000	0	426,000	451,000
	16.2 Funds held by or deposited with reinsured companies	0	0	0	0
	16.3 Other amounts receivable under reinsurance contracts	0	0	0	0
17.	Amounts receivable relating to uninsured plans	0	0	0	0
18.1	Current federal and foreign income tax recoverable and interest thereon	233,000	0	233,000	0
18.2	Net deferred tax asset	3,082,000	878,000	2,204,000	1,979,000
19.	Guaranty funds receivable or on deposit	9,000	0	9,000	14,000
20.	Electronic data processing equipment and software	1,000	0	1,000	1,000
21.	Furniture and equipment, including health care delivery assets($...0)	88,000	88,000	0	0
22.	Net adjustment in assets and liabilities due to foreign exchange rates	0	0	0	0
23.	Receivables from parent, subsidiaries and affiliates	0	0	0	0
24.	Health care ($...0) and other amounts receivable	0	0	0	0
25.	Aggregate write-ins for other than invested assets	621,000	35,000	586,000	641,000
26.	Total Assets excluding Separate Accounts, segregated Accounts and Protected Cell Accounts (Lines 12 to 25)	101,454,000	1,454,000	100,000,000	99,676,000
27.	From Separate Accounts, Segregated Accounts and Protected Cell Accounts	0	0	0	0
28.	TOTALS (Lines 26 and 27)	101,454,000	1,454,000	100,000,000	99,676,000

LIABILITIES, SURPLUS AND OTHER FUNDS

		1 Current Year	2 Prior Year
1.	Losses (Part 2A, Line 35, Column 8)	41,894,000	40,933,000
2.	Reinsurance payable on paid losses and loss adjustment expenses (Schedule F , Part 1, Column 6)	0	0
3.	Loss adjustment expenses (Part 2A, Line 35, Col 9)	9,663,000	9,664,000
4.	Commissions payable, contingent commissions and other similar charges	763,000	721,000
5.	Other expenses (excluding taxes, licenses, and fees)	668,000	658,000
6.	Taxes, licenses, and fees (excluding federal and foreign income taxes)	501,000	523,000
7.1	Current federal and foreign income taxes (including $...0 on realized capital gains (losses))	0	120,000
7.2	Net deferred tax liability	0	0
8.	Borrowed money $ …. 0 and interest thereon $.... 0	0	0
9.	Unearned Premiums (Part 1A, Line 38, Col 5)(after deducting unearned premiums for ceded reinsurance of $ 920,000 and including warranty reserves of $...0 and accrued accident and health experience rating refunds including $...0 for medical loss ratio rebate per the Public Health Service Act)	11,895,000	11,557,000
10.	Advance premium	0	0
11.	Dividends declared and unpaid:		
	11.1 Stockholders	1,500,000	1,500,000
	11.2 Policyholders	62,000	50,000
12.	Ceded reinsurance premiums payable (net of ceding commissions)	440,000	608,000
13.	Funds held by company under reinsurance treaties (Schedule F, Part 3, Col 20)	170,000	128,000
14.	Amounts withheld or retained by account of others	308,000	255,000
15.	Remittances and items not allocated	57,000	28,000
16.	Provision for reinsurance (including $....13,000 certified) (Schedule F, Part 3, Column 78)	283,000	272,000
17.	Net adjustments in assets and liabilities due to foreign exchange rates	31,000	(12,000)
18.	Drafts outstanding	0	0
19.	Payable to parent, subsidiaries and affiliates	0	0
20.	Derivatives	0	63,000
21.	Payable for securities	287,000	3,000
22.	Payable for securities lending	79,000	183,000
23.	Liability for amounts held under uninsured plans	0	0
24.	Capital notes $...0 and interest thereon $.....0	0	0
25.	Aggregate write-ins for liabilities	375,000	814,000
26.	Total liabilities excluding protected cell liabilities (Lines 1 through 25)	68,976,000	68,068,000
27.	Protected cell liabilities	0	0
28.	Total liabilities (Lines 26 and 27)	68,976,000	68,068,000
29.	Aggregate write-ins for special surplus funds	848,000	777,000
30.	Common capital stock	108,000	108,000
31.	Preferred capital stock	0	0
32.	Aggregate write-ins for other than special surplus funds	0	0
33.	Surplus notes	0	0
34.	Gross paid in and contributed surplus	17,585,000	17,585,000
35.	Unassigned funds (surplus)	12,483,000	13,138,000
36.	Less treasury stock, at cost	0	0
	36.1 ……..0.000 shares common (value included in Line 30 $.....0)	0	0
	36.2 ……..0.000 shares preferred (value included in Line 30 $.....0)	0	0
37.	Surplus as regards policyholders (Lines 29 to 35, less 36) (Page 4, Line 39)	31,024,000	31,608,000
38.	TOTALS (Page 2, Line 28, Col. 3)	100,000,000	99,676,000

DETAILS OF WRITE-INS

2501.	Other Liabilities	2,000	2,000
2502.	Investment real estate liability	94,000	92,000
2503.	Interest deposit liability	3,000	3,000
2598.	Summary of remaining write-ins	276,000	717,000
2599.	Totals (Lines 2501 through 2503 plus 2598) (Line 25 above)	375,000	814,000
2901.	Special surplus for deferred taxes	703,000	608,000
2902.	Special surplus from retroactive reinsurance	140,000	163,000
2903.	Guaranty surplus fund	5,000	5,000
2998.	Summary of remaining write-ins	0	0
2999.	Totals (Lines 2901 through 2903 plus 2998) (Line 29 above)	848,000	777,000

STATEMENT OF INCOME

		1 Current Year	2 Prior Year
	UNDERWRITING INCOME		
1.	Premiums earned (Part 1, Line 35, Column 4)	26,512,000	25,535,000
	DEDUCTIONS		
2.	Losses incurred (Part 2, line 35, Column 7)	16,907,000	12,798,000
3.	Loss adjustment expenses incurred (Part 3, line 25, Column 1)	3,255,000	3,008,000
4.	Other underwriting expenses incurred (Part 3, line 25, Column 2)	8,483,000	8,240,000
5.	Aggregate write-ins for underwriting deductions	0	1,000
6.	Total underwriting deductions (Lines 2 through 5)	28,645,000	24,047,000
7.	Net Income of protected cells	0	0
8.	Net underwriting gain (loss) (Line 1 minus line 6 plus line 7)	(2,133,000)	1,488,000
	INVESTMENT INCOME		
9.	Net investment income earned (Exhibit of Net Investment Income, Line 17)	4,290,000	4,860,000
10.	Net realized capital gains (losses) less capital gains tax of $... 99,000 (Exhibit of Capital Gains (Losses))	15,000	(445,000)
11.	Net investment gain (loss) (Lines 9 + 10)	4,305,000	4,415,000
	OTHER INCOME		
12.	Net gain (loss) from agents' or premium balances charged off (amount recovered $65,000)	(78,000)	(74,000)
13.	Finance and service charges not included in premiums	122,000	124,000
14.	Aggregate write-ins for miscellaneous income	(11,000)	(3,000)
15.	Total other income (Lines 12 through 14)	33,000	47,000
16.	Net income before dividends to policyholders, after capital gains tax and before all other federal and foreign income taxes (Lines 8 + 11 + 15)	2,205,000	5,950,000
17.	Dividends to policyholders	46,000	32,000
18.	Net income, after dividends to policyholders, after capital gains tax and before all other federal and foreign income taxes (Line 16 minus Line 17)	2,159,000	5,918,000
19.	Federal and foreign income taxes incurred	(20,000)	963,000
20.	Net income (Line 18 minus Line 19) (to Line 22)	2,179,000	4,955,000
	CAPITAL AND SURPLUS ACCOUNT		
21.	Surplus as regards policyholders, December 31 Prior year (Page 4, Line 39, Column 2)	31,609,000	35,793,000
22.	Net income (From Line 20)	2,179,000	4,955,000
23.	Net transfers (to) from Protected Cell accounts	0	0
24.	Change in net unrealized capital gains or (losses) less capital gains tax of $ …7,000	81,000	119,000
25.	Change in net unrealized foreign exchange capital gain (loss)	(122,000)	66,000
26.	Change in net deferred income tax	14,000	(243,000)
27.	Change in nonadmitted assets (Exhibit of Nonadmitted Assets, Line 28 Column 3)	(13,000)	498,000
28.	Change in provision for reinsurance (Page 3, Line 16, Column 2 minus Column 1)	(11,000)	124,000
29.	Change in surplus notes	0	0
30.	Surplus (contributed to) withdrawn from protected cells	0	0
31.	Cumulative effect of changes in accounting principles	0	0
32.	Capital changes:		
	32.1 Paid in	0	0
	32.2 Transferred from surplus (Stock dividend)	0	0
	32.3 Transferred to surplus	0	0
33.	Surplus Adjustments:		
	33.1 Paid in	0	361,000
	33.2 Transferred to capital (Stock Dividend)	0	0
	33.3 Transferred from Capital	0	0
34.	Net remittances from or (to) Home Office	0	0
35.	Dividends to stockholders	(2,617,000)	(10,023,000)
36.	Change in treasury stock (Page 3, Line 36.1 and 36.2, Column 2 minus Column 1)	0	0
37.	Aggregate write-ins for gains and losses in surplus	(96,000)	(42,000)
38.	Change in surplus as regards policyholders for the year (Lines 22 through 37)	(585,000)	(4,185,000)
39.	Surplus as regards policyholders, December 31 current year (Line 21 plus Line 38) (Page 3, Line 37)	31,024,000	31,608,000

CASH FLOW

		1 Current Year	2 Prior Year
	CASH FROM OPERATIONS		
1.	Premiums collected net of Reinsurance	26,881,000	25,228,000
2.	Net Investment Income	4,618,000	5,442,000
3.	Miscellaneous Income	33,000	48,000
4.	Total (Lines 1 through 3)	31,532,000	30,718,000
5.	Benefit and loss related payments	15,952,000	13,249,000
6.	Net transfers to Separate Accounts, Segregated Accounts and Proteced Cell Accounts	0	0
7.	Commissions, expenses paid and aggregate write-ins for deductions	11,710,000	11,647,000
8.	Dividends Paid to Policyholders	58,000	32,000
9.	Federal and foreign income taxes paid (recovered) net of $..... tax on capital gains (losses)	423,000	757,000
10.	Total (Lines 5 though 9)	28,143,000	25,685,000
11.	Net cash from operations (Line 4 minus Line 10)	3,389,000	5,033,000
	CASH FROM INVESTMENTS		
12.	Proceeds from Investments sold, matured or repaid:		
	12.1 Bonds	3,627,000	11,371,000
	12.2 Stocks	241,000	596,000
	12.3 Mortgage Loans	5,000	16,000
	12.4 Real Estate	0	49,000
	12.5 Other invested assets	786,000	363,000
	12.6 Net gains or (losses) on cash, cash equivalents and short-term investments	0	0
	12.7 Miscellaneous proceeds	104,000	7,000
	12.8 Total investment proceeds (Lines 12.1 to 12.7)	4,763,000	12,402,000
13.	Cost of investments acquired (long-term only):		
	13.1 Bonds	9,661,000	5,845,000
	13.2 Stocks	386,000	1,230,000
	13.3 Mortgage Loans	14,000	4,000
	13.4 Real Estate	277,000	77,000
	13.5 Other invested assets	965,000	1,213,000
	13.6 Miscellaneous applications	(284,000)	0
	13.7 Total investments acquired (Lines 13.1 to 13.6)	11,019,000	8,369,000
14.	Net increase (decrease) in contract loans and premium notes	0	0
15.	Net cash from investments (Line 12.8 minus Lines 13.7 minus Line 14)	(6,256,000)	4,033,000
	CASH FROM FINANCING AND MISCELLANEOUS SOURCES		
16.	Cash provided (applied):		
	16.1 Surplus notes, capital notes	0	0
	16.2 Capital and paid in surplus, less treasury stock	0	362,000
	16.3 Borrowed funds	0	0
	16.4 Net deposits on deposit-type contracts and other insurance liabilities	0	0
	16.5 Dividends to stockholders	(2,617,000)	10,025,000
	16.6 Other cash provided (applied)	0	0
17.	Net cash from financing and miscellaneous source (Line 16.1 to 16.4 minus line 16.5 plus line 16.6)	2,617,000	(9,663,000)
	RECONCILIATION OF CASH, CASH EQUIVALENTS AND SHORT TERM INVESTMENTS		
18.	Net change in cash, cash equivalents and short-term investments (Line 11 plus line 15 plus line 17)	(250,000)	(597,000)
19.	Cash, cash equivalents and short-term investments:		
	19. Beginning of year	1,233,000	1,830,000
	19.2 End of year (line 18 plus line 19.1)	983,000	1,233,000
	Note: supplemental disclosures of cash flow information for non-cash transactions		
20.0001	Exchange of stock	10,000	0
20.0002	Bonds converted to stock	0	0
20.0003	Capital contribution	0	362,000

UNDERWRITING AND INVESTMENT EXHIBIT

PART 1- PREMIUMS EARNED

	Line of Business	1 Net Premiums Written per Column 6, Part 1B	2 Unearned Premiums Dec. 31 Prior Year - per Col 3, Last Year's Part 1	3 Unearned Premiums Dec 31. Current Year - per Col. 5 Part 1A	4 Premiums Earned During Year (Cols. 1 + 2 -3)
1.	Fire	2,484,000	1,158,000	1,133,000	2,509,000
2.	Allied Lines	0	0	0	0
3.	Farmowners multiple peril	0	0	0	0
4.	Homeowners multiple peril	4,555,000	2,290,000	2,400,000	4,445,000
5.	Commercial multiple peril	4,677,000	2,139,000	2,123,000	4,693,000
6.	Mortgage guaranty	0	0	0	0
8.	Ocean marine	0	0	0	0
9.	Inland marine	0	0	0	0
10.	Financial guaranty	0	0	0	0
11.1	Medical professional liability - occurrence	0	0	0	0
11.2	Medical professional liability - claims-made	0	0	0	0
12.	Earthquake	0	0	0	0
13.	Group accident and health	0	0	0	0
14.	Credit accident and health (group and individual)	0	0	0	0
15.	Other accident and health	0	0	0	0
16.	Workers' compensation	4,022,000	1,441,000	1,520,000	3,943,000
17.1	Other liability - occurrence	3,502,000	1,695,000	1,649,000	3,548,000
17.2	Other liability - claims-made	0	0	0	0
17.3	Excess workers' compensation	0	0	0	0
18.1	Products liability - occurrence	0	0	0	0
18.2	Products liability- claims-made	0	0	0	0
19.1, 19.2	Private passage auto liability	2,804,000	882,000	954,000	2,732,000
19.3, 19.4	Commercial auto liability	2,250,000	987,000	1,014,000	2,223,000
21.	Auto physical damage	2,312,000	811,000	845,000	2,278,000
22.	Aircraft (all perils)	0	0	0	0
23.	Fidelity	146,000	48,000	53,000	141,000
24.	Surety	0	0	0	0
26.	Burglary and theft	0	0	0	0
27.	Boiler and machinery	0	0	0	0
28.	Credit	0	0	0	0
29.	International	0	0	0	0
30.	Warranty	0	0	0	0
31.	Reinsurance - nonproportional assumed property	0	0	0	0
32.	Reinsurance - nonproportional assumed liability	0	0	0	0
33.	Reinsurance - nonproportional assumed financial lines	0	0	0	0
34.	Aggregate write-ins for other lines of business	0	0	0	0
35.	TOTALS	26,752,000	11,451,000	11,691,000	26,512,000
DETAILS OF WRITE-INS					
3401.		0	0	0	0
3402.		0	0	0	0
3403.		0	0	0	0
3498.	Summary of remaining write-ins for line 34 from overflow page	0	0	0	0
3499.	Totals (Lines 3401 through 3403 plus 3498) (Line 34 above)	0	0	0	0

UNDERWRITING AND INVESTMENT EXHIBIT

PART 1A - RECAPITULATION OF ALL PREMIUMS

	Line of Business	1 Amount Unearned (Running One Year or Less from Date of Policy) (a)	2 Amount Unearned (Running More Than One Year from Date of Policy (a)	3 Earned but Unbilled Premium	4 Reserve for Rate Credits and Retrospective Adjustments Based on Experience	5 Total Reserve for Unearned Premiums Cols 1 + 2 + 3 + 4
1.	Fire	1,026,000	116,000	(9,000)	0	1,133,000
2.	Allied Lines	0	0	0	0	0
3.	Farmowners multiple peril	0	0	0	0	0
4.	Homeowners multiple peril	2,400,000	0	0	0	2,400,000
5.	Commercial multiple peril	2,111,000	22,000	(10,000)	0	2,123,000
6.	Mortgage guaranty	0	0	0	0	0
8.	Ocean Marine	0	0	0	0	0
9.	Inland Marine	0	0	0	0	0
10.	Financial guaranty	0	0	0	0	0
11.1	Medical professionial liability - occurrence	0	0	0	0	0
11.2	Medical professionial liability - claims made	0	0	0	0	0
12.	Earthquake	0	0	0	0	0
13.	Group accident and health	0	0	0	0	0
14.	Credit accident and health	0	0	0	0	0
15.	Other accident and health	0	0	0	0	0
16.	Worker's Compensation	1,689,000	1,000	(32,000)	(138,000)	1,520,000
17.1	Other liability - occurrence	1,546,000	104,000	0	(1,000)	1,649,000
17.2	Other liability - claim made	0	0	0	0	0
17.3	Excess workers' compensation	0	0	0	0	0
18.1	Products liability- occurrence	0	0	0	0	0
18.2	Products liability- claims made	0	0	0	0	0
19.1, 19.2	Private passage auto liability	954,000	0	0	0	954,000
19.3, 19.4	Commercial auto liability	996,000	23,000	0	(5,000)	1,014,000
21.	Auto physical damage	841,000	4,000	0	0	845,000
22.	Aircraft (all perils)	0	0	0	0	0
23.	Fidelity	41,000	22,000	(10,000)	0	53,000
24.	Surety	0	0	0	0	0
26.	Burglary and theft	0	0	0	0	0
27.	Boiler and machinery	0	0	0	0	0
28.	Credit	0	0	0	0	0
29.	International	0	0	0	0	0
30.	Warranty	0	0	0	0	0
31.	Reinsurance- nonproportional assumed property	0	0	0	0	0
32.	Reinsurance- nonproportional assumed liability	0	0	0	0	0
33.	Reinsurance - nonproportional assumed financial lines	0	0	0	0	0
34.	Aggregate write-ins for other lines of business	0	0	0	0	0
35.	TOTALS	11,609,000	287,000	(61,000)	(144,000)	11,691,000
36.	Accrued retrospective premiums based on experience					144,000
37.	Earned but unbilled premiums					60,000
38.	Balance (Sum of Lines 35 through 37)					11,895,000

DETAILS OF WRITE-INS

3401.		0	0	0	0	0
3402.		0	0	0	0	0
3403.		0	0	0	0	0
3498.	Summary of remaining write-ins for Line 34 from overflow page	0	0	0	0	0
3499.	Totals (Lines 3401 through 3403 plus 3498) (Line 34 above)	0	0	0	0	0

(a) State here basis of computation used in each case: Daily pro rata; pools and associations as submitted

UNDERWRITING AND INVESTMENT EXHIBIT

PART 1B - PREMIUMS WRITTEN

	Line of Business	1 Direct Business (a)	Reinsurance Assumed 2 From Affiliates	Reinsurance Assumed 3 From Non-Affiliates	Reinsurance Ceded 4 To Affiliates	Reinsurance Ceded 5 To Non-Affiliates	6 Net Premiums Written Cols. 1 + 2 + 3 - 4 - 5
1.	Fire	3,254,000	0	0	0	770,000	2,484,000
2.	Allied Lines	0	0	0	0	0	0
3.	Farmowners multiple peril	0	0	0	0	0	0
4.	Homeowners multiple peril	4,646,000	0	0	0	91,000	4,555,000
5.	Commercial multiple peril	5,003,000	0	0	0	326,000	4,677,000
6.	Mortgage guaranty	0	0	0	0	0	0
8.	Ocean Marine	0	0	0	0	0	0
9.	Inland Marine	0	0	0	0	0	0
10.	Financial guaranty	0	0	0	0	0	0
11.1	Medical professional liability - occurrence	0	0	0	0	0	0
11.2	Medical professional liability - claims made	0	0	0	0	0	0
12.	Earthquake	0	0	0	0	0	0
13.	Group accident and health	0	0	0	0	0	0
14.	Credit accident and health	0	0	0	0	0	0
15.	Other accident and health	0	0	0	0	0	0
16.	Worker's Compensation	4,394,000	0	0	0	372,000	4,022,000
17.1	Other liability - occurrence	3,749,000	0	0	0	247,000	3,502,000
17.2	Other liability - claim made	0	0	0	0	0	0
17.3	Excess workers' compensation	0	0	0	0	0	0
18.1	Products liability- occurrence	0	0	0	0	0	0
18.2	Products liability- claims made	0	0	0	0	0	0
19.1, 19.2	Private passage auto liability	2,804,000	0	0	0	0	2,804,000
19.3, 19.4	Commercial auto liability	2,334,000	0	0	0	84,000	2,250,000
21.	Auto physical damage	2,312,000	0	0	0	0	2,312,000
22.	Aircraft (all perils)	0	0	0	0	0	0
23.	Fidelity	138,000	0	0	0	(8,000)	146,000
24.	Surety	0	0	0	0	0	0
26.	Burglary and theft	0	0	0	0	0	0
27.	Boiler and machinery	0	0	0	0	0	0
28.	Credit	0	0	0	0	0	0
29.	International	0	0	0	0	0	0
30.	Warranty	0	0	0	0	0	0
31.	Reinsurance- nonproportional assumed property	0	0	0	0	0	0
32.	Reinsurance- nonproportional assumed liability	0	0	0	0	0	0
33.	Reinsurance - nonproportional assumed financial lines	0	0	0	0	0	0
34.	Aggregate write-ins for other lines of business	0	0	0	0	0	0
35.	TOTALS	28,634,000	0	0	0	1,882,000	26,752,000

DETAILS OF WRITE-INS

3401.		0	0	0	0	0	0
3402.		0	0	0	0	0	0
3403.		0	0	0	0	0	0
3498.	Summary of remaining write-ins for line 34 from overflow page	0	0	0	0	0	0
3499.	Totals (Lines 3401 through 3403 plus 3498) (Line 34 above)	0	0	0	0	0	0

UNDERWRITING AND INVESTMENT EXHIBIT

PART 2 LOSSES PAID AND INCURRED

	Line of Business	Losses Paid Less Salvage 1 Direct Business	2 Reinsurance Assumed	3 Reinsurance Recovered	4 Net Payments (Cols. 1 + 2 - 3)	5 Net Losses Unpaid Current Year (Part 2A, Col. 8)	6 Net Losses Unpaid Prior Year	7 Losses Incurred Current Year (Col 4 + 5 - 6)	8 Percentage of Losses Incurred (Col 7, Part 2) to Premiums Earned (Col 4, Part 1)
1.	Fire	1,560,000	0	158,000	1,402,000	1,402,000	1,250,000	1,554,000	62
2.	Allied Lines	0	0	0	0	0	0	0	0
3.	Farmowners multiple peril	0	0	0	0	0	0	0	0
4.	Homeowners multiple peril	3,645,000	0	6,000	3,639,000	1,311,000	1,161,000	3,789,000	85
5.	Commercial multiple peril	2,594,000	0	242,000	2,352,000	3,311,000	3,539,000	2,124,000	45
6.	Mortgage guaranty	0	0	0	0	0	0	0	0
8.	Ocean Marine	0	0	0	0	0	0	0	0
9.	Inland Marine	0	0	0	0	0	0	0	0
10.	Financial guaranty	0	0	0	0	0	0	0	0
11.1	Medical professionial liability - occurrence	0	0	0	0	0	0	0	0
11.2	Medical professionial liability - claims made	0	0	0	0	0	0	0	0
12.	Earthquake	0	0	0	0	0	0	0	0
13.	Group accident and health	0	0	0	0	0	0	0	0
14.	Credit accident and health	0	0	0	0	0	0	0	0
15.	Other accident and health	0	0	0	0	0	0	0	0
16.	Worker's Compensation	1,745,000	0	142,000	1,603,000	13,833,000	15,118,000	318,000	8
17.1	Other liability - occurrence	3,565,000	0	1,136,000	2,429,000	16,050,000	14,369,000	4,110,000	116
17.2	Other liability - claim made	0	0	0	0	0	0	0	0
17.3	Excess workers' compensation	0	0	0	0	0	0	0	0
18.1	Products liability- occurrence	0	0	0	0	0	0	0	0
18.2	Products liability- claims made	0	0	0	0	0	0	0	0
19.1, 19.2	Private passage auto liability	1,696,000	0	27,000	1,669,000	2,083,000	1,961,000	1,791,000	66
19.3, 19.4	Commercial auto liability	1,328,000	0	103,000	1,225,000	2,974,000	2,767,000	1,432,000	64
21.	Auto physical damage	1,512,000	0	3,000	1,509,000	214,000	195,000	1,528,000	67
22.	Aircraft (all perils)	0	0	0	0	0	0	0	0
23.	Fidelity	167,000	0	49,000	118,000	716,000	573,000	261,000	185
24.	Surety	0	0	0	0	0	0	0	0
26.	Burglary and theft	0	0	0	0	0	0	0	0
27.	Boiler and machinery	0	0	0	0	0	0	0	0
28.	Credit	0	0	0	0	0	0	0	0
29.	International	0	0	0	0	0	0	0	0
30.	Warranty	0	0	0	0	0	0	0	0
31.	Reinsurance- nonproportional assumed property	XXX	0	0	0	0	0	0	0
32.	Reinsurance- nonproportional assumed liability	XXX	0	0	0	0	0	0	0
33.	Reinsurance - nonproportional assumed financial lines	XXX	0	0	0	0	0	0	0
34.	Aggregate write-ins for other lines of business	0	0	0	0	0	0	0	0
35.	TOTALS	17,812,000	0	1,866,000	15,946,000	41,894,000	40,933,000	16,907,000	64

DETAILS OF WRITE-INS

3401.		0	0	0	0	0	0	0	0
3402.		0	0	0	0	0	0	0	0
3403.		0	0	0	0	0	0	0	0
3498.	Summary of remaining write-ins for line 34 from overflow page	0	0	0	0	0	0	0	0
3499.	Totals	0	0	0	0	0	0	0	0

UNDERWRITING AND INVESTMENT EXHIBIT

PART 2A - UNPAID LOSSES AND LOSS ADJUSTMENT EXPENSES

		Reported Losses				Incurred But Not Reported			8	9
		1	2	3	4	5	6	7		
		Direct Business	Reinsurance Assumed	Deduct Reinsurance Recoverable from Authorized and Unauthorized Companies	Net Losses Excluding Incurred but not Reported (Cols 1 + 2 - 3)	Direct	Reinsurance Assumed	Reinsurance Ceded	Net Losses Unpaid (Col 4 + 5 + 6 - 7)	Net Unpaid Loss Adjustment Expenses
1.	Fire	1,105,000	0	140,000	965,000	522,000	0	85,000	1,402,000	222,000
2.	Allied Lines	0	0	0	0	0	0	0	0	0
3.	Farmowners multiple peril	0	0	0	0	0	0	0	0	0
4.	Homeowners multiple peril	592,000	0	3,000	589,000	734,000	0	12,000	1,311,000	144,000
5.	Commercial multiple peril	2,323,000	0	360,000	1,963,000	1,498,000	0	150,000	3,311,000	1,471,000
6.	Mortgage guaranty	0	0	0	0	0	0	0	0	0
8.	Ocean Marine	0	0	0	0	0	0	0	0	0
9.	Inland Marine	0	0	0	0	0	0	0	0	0
10.	Financial guaranty	0	0	0	0	0	0	0	0	0
11.1	Medical professionial liability - occurrence	0	0	0	0	0	0	0	0	0
11.2	Medical professionial liability - claims made	0	0	0	0	0	0	0	0	0
12.	Earthquake	0	0	0	0	0	0	0	0	0
13.	Group accident and health	0	0	0	0	0	0	0	0	0
14.	Credit accident and health	0	0	0	0	0	0	0	0	0
15.	Other accident and health	0	0	0	0	0	0	0	0	0
16.	Worker's Compensation	9,343,000	0	1,604,000	7,739,000	6,652,000	0	558,000	13,833,000	2,113,000
17.1	Other liability - occurrence	6,868,000	0	2,122,000	4,746,000	14,189,000	0	2,885,000	16,050,000	4,641,000
17.2	Other liability - claim made	0	0	0	0	0	0	0	0	0
17.3	Excess workers' compensation	0	0	0	0	0	0	0	0	0
18.1	Products liability- occurrence	0	0	0	0	0	0	0	0	0
18.2	Products liability- claims made	0	0	0	0	0	0	0	0	0
19.1, 19.2	Private passage auto liability	2,116,000	0	633,000	1,483,000	628,000	0	28,000	2,083,000	399,000
19.3, 19.4	Commercial auto liability	2,020,000	0	285,000	1,735,000	1,389,000	0	150,000	2,974,000	476,000
21.	Auto physical damage	112,000	0	5,000	107,000	137,000	0	30,000	214,000	96,000
22.	Aircraft (all perils)	0	0	0	0	0	0	0	0	0
23.	Fidelity	466,000	0	191,000	275,000	581,000	0	140,000	716,000	101,000
24.	Surety	0	0	0	0	0	0	0	0	0
26.	Burglary and theft	0	0	0	0	0	0	0	0	0
27.	Boiler and machinery	0	0	0	0	0	0	0	0	0
28.	Credit	0	0	0	0	0	0	0	0	0
29.	International	0	0	0	0	0	0	0	0	0
30.	Warranty	0	0	0	0	0	0	0	0	0
31.	Reinsurance- nonproportional assumed property	XXX	0	0	0	XXX	0	0	0	0
32.	Reinsurance- nonproportional assumed liability	XXX	0	0	0	XXX	0	0	0	0
33.	Reinsurance - nonproportional assumed financial lines	XXX	0	0	0	XXX	0	0	0	0
34.	Aggregate write-ins for other lines of business	0	0	0	0	0	0	0	0	0
35.	TOTALS	24,945,000	0	5,343,000	19,602,000	26,330,000	0	4,038,000	41,894,000	9,663,000

DETAILS OF WRITE-INS

3401.		0	0	0	0	0	0	0	0	0
3402.		0	0	0	0	0	0	0	0	0
3403.		0	0	0	0	0	0	0	0	0
3498.	Summary of remaining write-ins for line 34 from overflow page	0	0	0	0	0	0	0	0	0
3499.	Totals (Lines 3401 through 3403 plus 3498) (Line 34 above)	0	0	0	0	0	0	0	0	0

UNDERWRITING AND INVESTMENT EXHIBIT

PART 3 - EXPENSES

	1 Loss Adjustment Expenses	2 Other Underwriting Expenses	3 Investment Expenses	4 Total
1. Claims Adjustment Services:				
1.1 Direct	1,881,000	0	0	1,881,000
1.2 Reinsurance Assumed	0	0	0	0
1.3 Reinsurance Ceded	210,000	0	0	210,000
1.4 Net claims adjusment services (1.1 + 1.2 - 1.3)	1,671,000	0	0	1,671,000
2. Commission and Brokerage:				
2.1 Direct, excluding contingent	0	4,759,000	0	4,759,000
2.2 Reinsurance assumed, excluding contingent	0	0	0	0
2.3 Reinsurance ceded, excluding contingent	0	816,000	0	816,000
2.4 Contingent - direct	0	121,000	0	121,000
2.5 Contingent - reinsurance assumed	0		0	0
2.6 Contingent - reinsurance ceded	0	9,000	0	9,000
2.7 Policy and membership fees	0	0	0	0
2.8 Net commission and brokerage (2.1 + 2.2 - 2.3 + 2.4 + 2.5 - 2.6 + 2.7)	0	4,055,000	0	4,055,000
3. Allowances to managers and agents	0	4,000	0	4,000
4. Advertising	0	208,000	0	208,000
5. Boards, bureaus and associations	7,000	106,000	0	113,000
6. Surveys and underwriting reports	0	99,000	0	99,000
7. Audit of assureds' records	0	0	0	0
8. Salary and related items:				
8.1 Salaries	949,000	1,845,000	32,000	2,826,000
8.2 Payroll taxes	69,000	115,000	0	184,000
9. Employee relations and welfare	182,000	293,000	3,000	478,000
10. Insurance	117,000	23,000	0	140,000
11. Directors' fees	0	0	0	0
12. Travel and travel items	64,000	95,000	0	159,000
13. Rent and rent items	62,000	133,000	1,000	196,000
14. Equipment	11,000	42,000	3,000	56,000
15. Cost or depreciation of EDP equipment and software	30,000	330,000	0	360,000
16. Printing and stationery	5,000	19,000	0	24,000
17. Postage, telephone and telegraph, exchange and express	19,000	112,000	0	131,000
18. Legal and auditing	44,000	14,000	2,000	60,000
19. Total (Lines 3 to 18)	1,559,000	3,438,000	41,000	5,038,000
20. Taxes, Licenses and Fees:				
20.1 State and local insurance taxes deducting guaranty association credits of $ 1,103	0	791,000	0	791,000
20.2 Insurance department licenses and fees	0	53,000	0	53,000
20.3 Gross guaranty association assessments	0	(2,000)	0	(2,000)
20.4 All other (excluding federal and foreign income and real estate)	0	18,000	0	18,000
20.5 Total taxes, licenses and fees (20.1 + 20.2 + 20.3 + 20.4)	0	860,000	0	860,000
21. Real estate expenses	0	0	332,000	332,000
22. Real estate taxes	0	0	14,000	14,000
23. Reimbursement by uninsured plans	0	0	0	0
24. Aggregate write-ins for miscellaneous expenses	25,000	130,000	6,000	161,000
25. Total expenses incurred	3,255,000	8,483,000	393,000	12,131,000
26. Less unpaid expenses - current year	9,663,000	1,918,000	14,000	11,595,000
27. Add unpaid expenses - prior year	9,664,000	1,886,000	17,000	11,567,000
28. Amounts receivable relating to uninsured plans, prior year	0	0	0	0
29. Amounts receivable relating to uninsured plans, current year	0	0	0	0
30. TOTAL EXPENSES PAID (Lines 25 - 26 + 27 - 28 + 29)	3,256,000	8,451,000	396,000	12,103,000

EXHIBIT OF NET INVESTMENT INCOME

			1 Collected During Year	2 Earned During Year
1.	U. S. Government bonds	(a)	248,000	249,000
1.1	Bonds exempt from U.S. tax	(a)	1,275,000	1,280,000
1.2	Other Bonds (unaffiliated)	(a)	1,051,000	1,026,000
1.3	Bonds of Affiliates	(a)	0	0
2.1	Preferred stocks (unaffliliated)	(b)	2,000	2,000
2.11	Preferred stocks of affiliates	(b)	0	0
2.2	Common stocks (unaffiliated)		951,000	951,000
2.21	Common stocks of affiliates		0	0
3.	Mortgage loans	(c)	13,000	13,000
4.	Real Estate	(d)	696,000	696,000
5.	Contract Loans		0	0
6.	Cash, cash equivalents and short-term investments	(e)	6,000	6,000
7.	Derivative Instruments	(f)	0	0
8.	Other Invested Assets		649,000	645,000
9.	Aggregate write-ins for invested assets		1,000	1,000
10.	Total gross invested income		4,879,000	4,869,000
11.	Investment expenses	(g)		399,000
12.	Investment Taxes, licenses and fees, excluding federal income tax	(g)		0
13.	Interest Expense	(h)		0
14.	Depreciation on real estate and other invested assets	(i)		179,000
15.	Aggregate write-ins for deductions from investment income			1,000
16.	Total deductions (Lines 11 through 15)			579,000
17.	Net Investment Income (Line 10 minus Line 16)			4,290,000

DETAILS OF WRITE-INS

0901.	Property and wind plans		1,000	1,000
0902			0	0
0903			0	0
0998	Summary of remaining write-ins for Line 9 from overflow page		0	0
0999	Totals (Lines 0901 thru 0903 plus 0988) (Line 9 above)		1,000	1,000
1501.	Management Fees			1,000
1502.				0
1503.				0
1598.	Summary of remaining write-ins for Line 15 from overflow page			0
1599.	Totals (Line 1501 thur 1503) (Line 15 above)			1,000

(a) Includes $..... 36,000 accrual of discount less $... 288,000 amoritzation of premium and less $... 26,000 paid for accrued interest on purchases.
(b) Includes $..... 0 accrual of discount less $... 0 amoritzation of premium and less $... 0 paid for accrued dividend on purchases.
(c) Includes $..... 0 accrual of discount less $... 0 amoritzation of premium and less $... 0 paid for accrued interest on purchases.
(d) Includes $.....81,000 for company's occupancy of its own buildings, and excludes $... 0 interest on encumrances.
(e) Includes $..... 200 accrual of discount less $... 0 amoritzation of premium and less $... 0 paid for accrued interest on purchases.
(f) Includes $..... 0 accrual of discount less $... 0 amoritzation of premium.
(g) Includes $..... 0 investment expenses and $... 0 investment taxes, licenses and fees, excluding federal income taxes attributable to Segregated and Separate Accounts.
(h) Includes $..... 0 interest on surplus notes and $... 0 interest on capital notes.
(i) Includes $..... 177,000 depreciation on real estate and $...0 depreciation on other invested assets.

EXHIBIT OF CAPITAL GAINS (LOSSES)

		1 Realized Gain (Loss) on Sales or Maturity	2 Other Realized Adjustments	3 Total Realized Capital Gain (Loss) (Columns 1 + 2)	4 Change in Unrealized Captial Gain (Loss)	5 Change in Unrealized Foreign Exchange Capital Gain (Loss)
1.	U. S. government bonds	0	0	0	0	0
1.1	Bonds exempt from U.S. Tax	12,000	(2,000)	10,000	2,000	0
1.2	Other bonds (unaffiliated)	81,000	42,000	123,000	22,000	(70,000)
1.3	Bonds of affiliates	0	0	0	0	0
2.1	Preferred stocks (unaffiliated)	0	0	0	(1,000)	0
2.11	Preferred stocks of affiliates	0	0	0	0	0
2.2	Common stocks (unaffiliated)	167,000	(14,000)	153,000	54,000	0
2.21	Common stocks of affiliates	0	0	0	(95,000)	0
3.	Mortgage loans	0	(9,000)	(9,000)	0	0
4.	Real Estate	0	0	0	0	0
.5	Contract Loans	0	0	0	0	0
6.	Cash, cash equivalents and short term investments	0	9,000	9,000	0	(2,000)
7.	Derivative instruments	(137,000)	0	(137,000)	(76,000)	0
8.	Othe invested assets	19,000	(67,000)	(48,000)	145,000	(6,000)
9.	Aggregate write-in for capital gains (losses0	0	13,000	13,000	38,000	(45,000)
10.	Total capital gains (losses)	142,000	(28,000)	114,000	89,000	(123,000)

Selected NOTES TO FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies and Going Concern

A. Accounting Policies

Fictitious Insurance Company prepares its statutory financial statements in conformity with accounting practices prescribed or permitted by the state of Florida. The state of Florida requires that insurance companies domiciled in Florida prepare their statutory basis financial statements in accordance with the National Association of Insurance Commissioners (NAIC) Accounting Practices and Procedures Manual, subject to any deviations prescribed or permitted by the Florida Insurance Commissioner. The impact of any permitted accounting practices on policyholder surplus of the Company is not material.

22. Events Subsequent

The company had no material subsequent events through February 15, 2019.

23. Reinsurance

A. Unsecured Reinsurance Recoverable

The company had one reinsurer whose aggregate recoverable for ceded losses, loss adjustment expenses and unearned premiums recoverable as of December 31, 2018 exceeded 3% of the Company's Surplus. The company was Good Reinsurer, F.E.I.N. xxxxxx. Its net recoverable was $4,189.000 or 14% of Surplus. Good Reinsurer has always been current in its payments and is an A+ rated company by A.M. Best and is financially sound.

B. Reinsurance Recoverable in Dispute

The company has a few recoverable in dispute, but they are not material.

C. Reinsurance Assumed and Ceded

(1) The following table sets forth the maximum return premium and commission equity due the reinsurers or the Company if all of the Company's ceded reinsurance was canceled as of December 31, 2018:

	Ceded Reinsurance		Net Reinsurance	
	Unearned Premium Reserve	Commission Equity	Unearned Premium Reserve	Commission Equity
Total	$ 920,000	$ 124,000	$ 11,691,000	$ 1,595,000

Direct Unearned Premium Reserve: $12,610,000

(2) Accruals for contingent, sliding scale adjustment and other profit sharing commissions, net of reinsurance assumed and ceded, amounted to $188,000 at December 31, 2018:

Direct Business	$200,000
Reinsurance Assumed	-
Reinsurance Ceded	11,000
Net	$189,000

D. Uncollectible Reinsurance

Not applicable.

E. Commutation of Ceded Reinsurance

Not applicable.

F. Retroactive Reinsurance

	Assumed	Ceded
a. Reserves Transferred		
(1) Initial Reserves		$ 676,613
(2) Adjustments - Prior Years		261,792
(3) Adjustments - Current Year		(5,791)
(4) Current Total		$ 932,614
b. Consideration Paid or Received		
(1) Initial Consideration		$ 602,314
(2) Adjustments - Prior Years		72,120
(3) Adjustments - Current Year		-
(4) Current Total		$ 674,434
c. Paid Losses Reimbursed or Recovered		
(1) Prior Years		$ 755,052
(2) Current Year		25,485
(3) Current Total		$ 780,537
d. Special Surplus from Retroactive Reinsurance		
(1) Initial Surplus Gain or Loss		$ 74,299
(2) Adjustments - Prior Years		189,673
(3) Adjustments - Current Year		(5,791)
(4) Current Year Restricted Surplus		135,715
(5) Cumulative Total Transferred to Unassigned Surplus		$ 122,270

e. All cedents and reinsurers included in the above transactions:

Company	Assumed	Ceded
Good Reinsurer		$ 532,613
Foreign Authorized		$ 400,000

f. Paid loss/LAE recoverable

Company	Paid Loss & ALAE Recoverable	Over 90 days overdue	Collateral Held
Good Reinsurer	$ 302,000	$ -	$ -
Foreign Authorized	$ 34,000	$ -	$ -

Selected NOTES TO FINANCIAL STATEMENTS

25. Changes in Incurred Losses and Loss Adjustment Expenses

During the period from January 1, 2018 to December 31, 2018, the prior year-end total loss and loss adjustment expense reserves for The Company developed favorably by $875,000. This development was driven mainly by better than expected loss and DCC development in the other liability, workers compensation and homeowners segments. The deterioration in the commercial auto liability and commercial multi-peril segments offset some of this positive development.

Homeowners showed positive development in the 2017 accident year which was driven by better than expected loss development primarily related to catastrophe losses. The deterioration in Commercial Auto was driven by worse than expected severity for 2008 through 2017. Asbestos and Environmental reserves developed unfavorably and drove the large development for prior years.

26. Intercompany Pooling Arrangements

The Company does not participate in any intercompany pooling.

27. Structured Settlements

The Company has purchased annuities from XYZ Life Insurance Company, under which the claimant is the payee and the Company is the owner of the annuity contract, to fund structured settlements. The statement value of these annuities is $ 4,304,000. The annuities are treated as closed claims, but in the event that XYZ Life Insurance Company fails to make the required annuity payments, the Company would be required to make such payments as not covered by state guaranty associations.

30. Premium Deficiency Reserves

The Company has no premium deficiency reserves and investment income was considered in determining premium deficiency reserves.

31. High Deductibles

The Company does not issue any policies with high deductible plans.

32. Discounting of Liabilities for Unpaid Losses or Unpaid Loss Adjustment Expenses

For Workers Compensation, the Company discounts its reserves for unpaid losses on a tabular basis with a discount rate of 3.5% based on United States Life Tables. Reserves for other liability structured settlements are discounted at a rate of 4.5% and reflect the Individual Annuity Mortality table.
The amount of tabular discount reserves for Workers Compensation is $1,159,000 of which $495,000 is the discount on case reserves and $664,000 is the discount on IBNR.
The amount of tabular discount for Other Liability is $206,000 of which $21,000 is the discount on case reserves, $15,000 is the discount on IBNR and $170,000 is the discount on structure settlements. The total amount of discount for Workers Compensation and Other Liability is $1,365,000.

33. Asbestos/Environmental Reserves

A. Does the Company have on the books or has it ever written an insured for which you have identified potential for the existence of a liability due to asbestos losses? Yes (X) No ( )

Exposures for asbestos and environmental losses arise from liability coverage written many years ago. The methods of determining estimates for reported and unreported losses and establishing resulting reserves and related reinsurance recoverables are periodically reviewed and updated. Conventional actuarial methods are not utilized to establish these reserves. Reserve methods used include an analysis of exposure and claim payment patterns and recent settlements, judicial

Due to the uncertainties of legal issues such as coverage, potential liability etc. for these asbestos and environmental related claims the Company believes that these claims could result in a liability that materially differs from current reserves.

The following tables summarize the activity for these asbestos and environmental claims for the past five years.

1. Direct - Asbestos:		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 6,268,000	$ 5,717,000	$ 4,439,000	$ 4,166,000	$ 3,957,000
b	Incurred Losses and LAE	-	49,000	249,000	353,000	262,000
c.	Calendar Year Payments for Losses and LAE	551,000	1,328,000	522,000	561,000	478,000
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 5,717,000	$ 4,438,000	$ 4,166,000	$ 3,958,000	$ 3,741,000

2. Assumed Reinsurance - Asbestos		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ -	$ -	$ -	$ -	$ -
b	Incurred Losses and LAE	-	-	-	-	-
c.	Calendar Year Payments for Losses and LAE	-	-	-	-	-
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ -	$ -	$ -	$ -	$ -

3. Net of Ceded Reinsurance - Asbestos		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 5,450,000	$ 5,023,000	$ 3,920,000	$ 3,709,000	$ 3,426,000
b	Incurred Losses and LAE	-	49,000	249,000	188,000	236,000
c.	Calendar Year Payments for Losses and LAE	427,000	1,153,000	459,000	471,000	382,000
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 5,023,000	$ 3,919,000	$ 3,710,000	$ 3,426,000	$ 3,280,000

B. State the amount of ending reserves for Bulk and IBNR included in Part A (Loss and LAE)

a.	Direct basis	$ 3,116,000
b.	Assumed Reinsurance basis	-
c.	Net of Ceded Reinsurance basis	$ 2,782,000

C. State the amount of ending reserves for loss adjustment expenses included in A above (Case, Bulk and IBNR)

a.	Direct basis	$ 962,000
b.	Assumed Reinsurance basis	-
c.	Net of Ceded Reinsurance basis	$ 907,000

Selected NOTES TO FINANCIAL STATEMENTS

D. Does the Company have on the books, or has it ever written an insured for which you have identified a potential for the existence of a liability due to environmental losses? Yes (X) No ( ).

Exposure for environmental losses arises from liability coverage written many years ago. The exposures include bodily injury and property damage losses.

1. Direct- Environmental:		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 562,000	$ 659,000	$ 565,000	$ 551,000	$ 503,000
b	Incurred Losses and LAE	249,000	108,000	114,000	60,000	108,000
c.	Calendar Year Payments for Losses and LAE	152,000	202,000	128,000	108,000	118,000
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 659,000	$ 565,000	$ 551,000	$ 503,000	$ 493,000

2. Assumed Reinsurance - Environmental		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ -	$ -	$ -	$ -	$ -
b	Incurred Losses and LAE	-	-	-	-	-
c.	Calendar Year Payments for Losses and LAE	-	-	-	-	-
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ -	$ -	$ -	$ -	$ -

3. Net of Ceded Reinsurance - Environmental		2014	2015	2016	2017	2018
a.	Beginning Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 558,000	$ 650,000	$ 556,000	$ 528,000	$ 471,000
b	Incurred Losses and LAE	248,000	108,000	94,000	47,000	102,000
c.	Calendar Year Payments for Losses and LAE	156,000	202,000	122,000	104,000	114,000
d.	Ending Reserves (including Case, Bulk + IBNR Loss & LAE)	$ 650,000	$ 556,000	$ 528,000	$ 471,000	$ 459,000

E. State the amount of ending reserves for Bulk and IBNR included in Part D (Loss and LAE)

a.	Direct Basis	$ 428,000
b.	Assumed Reinsurance Basis:	-
c.	Net of Ceded Reinsurance Basis	$ 425,000

F. State the amount of ending reserves for loss adjustment expenses included in D above (Case, Bulk and IBNR)

a.	Direct Basis	$ 112,000
b.	Assumed Reinsurance Basis:	-
c.	Net of Ceded Reinsurance Basis	$ 110,000

FIVE YEAR HISTORICAL DATA

		1 2018	2 2017	3 2016	4 2015	5 2014
	Gross Premiums Written (Page 8, Part 1B, Cols 1, 2 & 3)					
1.	Liability lines (Lines 11.1,11.2,16,17.1,17.2,17.3,18.1,18.2,19.1,19.2,19.3, & 19.4)	13,281,000	13,843,000	15,075,000	16,422,000	16,815,000
2.	Property lines (Lines 1, 2, 9, 12, 21, & 26)	5,566,000	4,990,000	5,436,000	5,925,000	6,155,000
3.	Property and liability combined lines (Lines 3, 4, 5, 8, 22 & 27)	9,649,000	8,936,000	8,651,000	8,544,000	8,355,000
4.	All other lines (Lines 6, 10, 13, 14, 15, 23, 24, 28, 29, 30 & 34)	138,000	316,000	357,000	347,000	345,000
5.	Nonproportional reinsurance lines (Lines 31, 32 & 33)	0	0	0	0	0
6.	Total (Line 35)	28,634,000	28,085,000	29,519,000	31,238,000	31,670,000
	Net Premiums Written (Page 8, Part 1B, Col 6)					
7.	Liability lines (Lines 11.1,11.2,16,17.1,17.2,17.3,18.1,18.2,19.1,19.2,19.3, & 19.4)	12,578,000	12,020,000	11,964,000	12,031,000	11,944,000
8.	Property lines (Lines 1, 2, 9, 12, 21, & 26)	4,796,000	4,881,000	4,935,000	5,120,000	5,258,000
9.	Property and liability combined lines (Lines 3, 4, 5, 8, 22 & 27)	9,232,000	8,880,000	8,470,000	8,290,000	8,077,000
10.	All other lines (Lines 6, 10, 13, 14, 15, 23, 24, 28, 29, 30 & 34)	146,000	155,000	152,000	142,000	84,000
11.	Nonproportional reinsurance lines (Lines 31, 32 & 33)	0	0	0	0	0
12.	Total (Line 35)	26,752,000	25,936,000	25,521,000	25,583,000	25,363,000
	Statement of Income (Page 4)					
13.	Net underwriting gain (loss) (Line 8)	(2,142,000)	1,487,000	2,544,000	1,883,000	2,773,000
14.	Net investment gain (loss) (Line 11)	4,305,000	4,414,000	2,850,000	3,993,000	4,747,000
15.	Total other income (Line 15)	32,000	48,000	38,000	143,000	47,000
16.	Dividends to policyholders (Line 17)	46,000	32,000	23,000	29,000	31,000
17.	Federal and foreign income taxes incurred (Line 19)	(30,000)	963,000	1,489,000	1,378,000	1,304,000
18.	Net income (Line 20)	2,179,000	4,954,000	3,920,000	4,612,000	6,232,000
	Balance Sheet Lines (Pages 2 and 3)					
19.	Total admitted assets excluding protected cell business (Page 2, Line 26, Col. 3)	100,000,000	99,686,000	104,389,000	104,063,000	107,754,000
20.	Premiums and considerations (Page 2, Col. 3):					
	20.1 In course of collection (Line 15.1)	2,626,000	2,866,000	2,069,000	1,335,000	1,575,000
	20.2 Deferred and not yet due (Line 15.2)	5,114,000	4,927,000	4,811,000	5,229,000	5,344,000
	20.3 Accrued retrospective premiums (Line 15.3)	250,000	263,000	650,000	433,000	305,000
21.	Total liabilities excluding protected cell business (Page 3, line 26)	68,976,000	68,068,000	68,595,000	69,490,000	70,387,000
22.	Losses (Page 3, Line 1)	41,894,000	40,933,000	41,642,000	42,689,000	43,743,000
23.	Loss adjustment expenses (Page 3, Line 3)	9,663,000	9,664,000	9,955,000	9,919,000	9,807,000
24.	Unearned premiums (Page 3, Line 9)	11,895,000	11,557,000	11,207,000	11,397,000	11,403,000
25.	Capital paid up (Page 3, Lines 30 & 31)	108,000	108,000	108,000	108,000	108,000
26.	Surplus as regards policyholders (Page 3, Line 37)	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
	Cash Flow (Page 5)					
27.	Net cash from operations (Line 11)	3,411,000	5,017,000	3,942,000	3,906,000	5,298,000
	Risk Based Capital Analysis					
28.	Total adjusted capital	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
29.	Authorized control level risk-based capital	5,588,000	6,097,300	5,854,000	5,685,000	6,517,000
	Percentage Distribution of Cash, Cash Equivalents and Invested Assets					
	(Page 2, Col3) (Item divided by Page 2, Line 12, Col. 3) x 100.0					
30.	Bonds (Line 1)	68	66	68	70	72
31.	Stocks (Lines 2.1 & 2.2)	22	22	21	18	18
32.	Mortgage loans on real estate (Lines 3.1 & 3.2)	0	0	0	0	0
33.	Real Estate (Lines 4.1, 4.2 & 4.3)	4	4	4	4	4
34.	Cash, cash equivalents and short term investments (Line 5)	2	2	2	4	2
35.	Contract loans (Line 6)	0	0	0	0	0
36.	Derivatives (Line 7)	0	0	0	0	0
37.	Other invested assets (Line 8)	4	5	4	4	4
38.	Receivable for securities (Line 9)	0	0	0	0	0
39.	Securities lending reinvested collateral assets (Line 10)	0	0	0	0	0
40.	Aggregate write-ins for invested assets (Line 11)	(0)	(0)	0	0	0
41.	Cash, cash equivalents and invested assets (Line 12)	100	100	100	100	100
	Investments in Parent, Subsidiaries and Affiliates					
42.	Affiliated bonds (Sch. D, Summary, Line 12, Col. 1)	0	0	0	0	0
43.	Affiliated preferred stocks (Sch. D, Summary, Line 18, Col. 1)	0	0	0	0	0
44.	Affiliated common stocks (Sch. D, Summary, Line 24, Col. 1)	0	0	0	0	0
45.	Affiliated short-term investments (Schedule DA, Verification, Col 5, Line 10)	0	0	0	0	0
46.	Affiliated mortgage loans on real estate	0	0	0	0	0
47.	All other affiliated	0	0	0	0	0
48.	Total of above lines 42 to 47	0	0	0	0	0
49.	Total investment in parent included in Lines 42 to 47 above	0	0	0	0	0
50.	Percentage of investments in parent, subsidiaries and affiliates to surplus as regard policyholders (Line 48 above divided by Page 3, Col. 1, Line 37 x 100.0)	0	0	0	0	0

FIVE YEAR HISTORICAL DATA

		1 2018	2 2017	3 2016	4 2015	5 2014
	Capital and Surplus Accounts (Page 4)					
51.	Net unrealized capital gains (losses) (Line 24)	81,000	119,000	3,250,000	373,000	1,743,000
52.	Dividends to stockholders (Line 35)	(2,617,000)	(10,024,000)	(7,327,000)	(5,973,000)	(7,754,000)
53.	Change in surplus as regards policyholders for the year (Line 38)	(585,000)	(4,185,000)	3,221,000	(1,995,000)	(753,000)
	Gross Losses Paid (Page 9, Part 2, Cols. 1 & 2)					
54.	Liability lines (lines 11.1,11.2,16,17.1,17.2,17.3,18.1,18.2,19.1,19.2,19.3, & 19.4)	8,335,000	8,961,000	8,829,000	9,280,000	9,610,000
55.	Property lines (lines 1, 2, 9, 12, 21, & 26)	3,072,000	2,799,000	3,077,000	3,144,000	2,835,000
56.	Property and liability combined lines (Lines 3, 4, 5, 8, 22 & 27)	6,239,000	4,456,000	3,951,000	3,906,000	3,437,000
57.	All other lines (Lines 6, 10, 13, 14, 15, 23, 24, 28, 29, 30 & 34)	167,000	161,000	173,000	327,000	905,000
58.	Nonproportional reinsurance lines (Lines 31, 32 & 33)	0	0	0	0	0
59.	Total (Line 35)	17,813,000	16,377,000	16,030,000	16,657,000	16,787,000
	Net Losses Paid (Page 9, Part 2, Col 4)					
60.	Liability lines (lines 11.1,11.2,16,17.1,17.2,17.3,18.1,18.2,19.1,19.2,19.3, & 19.4)	6,926,000	6,510,000	6,047,000	6,804,000	6,500,000
61.	Property lines (lines 1, 2, 9, 12, 21, & 26)	2,911,000	2,582,000	2,663,000	2,655,000	2,344,000
62.	Property and liability combined lines (Lines 3, 4, 5, 8, 22 & 27)	5,991,000	4,328,000	3,932,000	3,905,000	3,259,000
63.	All other lines (Lines 6, 10, 13, 14, 15, 23, 24, 28, 29, 30 & 34)	118,000	86,000	102,000	89,000	270,000
64.	Nonproportional reinsurance lines (Lines 31, 32 & 33)	0	0	0	0	0
65.	Total (Line 35)	15,946,000	13,506,000	12,744,000	13,453,000	12,373,000
	Operating Percentages					
	(Page 4) (Item divided by Page 4, Line1) x 100.0					
66.	Premiums earned (Line 1)	100.0	100.0	100.0	100.0	100.0
67.	Losses incurred (Line 2)	63.8	50.1	45.7	48.6	46.4
68.	Loss expenses incurred (Line 3)	12.3	11.8	12.4	12.8	12.2
69.	Other underwriting expenses incurred (Line 4)	32.0	32.3	32.0	31.2	30.4
70.	Net underwriting gain (loss) (Line 8)	(8.1)	5.8	9.9	7.4	10.9
	Other Percentages					
71.	Other underwriting expenses to net premiums written (Page 4, Lines 4 + 5 - 15 divided by Page 8, Part 1B, Col. 6, Line 35 x 100.0)	31.6	31.6	32.0	30.6	30.3
72.	Losses and loss expense incurred to premiums earned (Page 4, Lines 2 + 3 divided by Page 4, Line 1 x 100.0)	76.0	61.9	58.1	61.4	58.6
73.	Net premiums written to policyholders' surplus (Page 8, Part 1B, Col. 6, Line 35, divided by Page 3, Line 37, Col.1 x 100.0)	86.2	82.1	71.3	74.0	67.9
	One Year Loss Development (000 omitted)					
74.	Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2-Summary, Line 12, Col.11)	(875)	(1,354)	(1,618)	(1,935)	(918)
75.	Percent development of losses and loss expenses incurred to policyholders' surplus of prior year end (Line 73 above divided by Page 4, Line 21, Col. 1 x 100)	(2.8)	(3.8)	(5.0)	(5.6)	(2.6)
	Two Year Loss Development (000 omitted)					
76.	Development in estimated losses and loss expenses incurred 2 years before the current year and prior year (Schedule P, Part 2-Summary, Line 12, Col.12)	(2,602)	(2,906)	(3,680)	(2,544)	(1,059)
77.	Percent of development of losses and loss expenses incurred to reported policyholders' surplus of second prior year end (Line 75 above divided by Page 4, Line 21, Col. 2 x 100.0)	(7.3)	(8.9)	(10.6)	(7.3)	(3.0)

SCHEDULE F Part 1

Assumed Reinsurance as of December 31, Current Year (000 Omitted)

1	2	3	4	5	Reinsurance Recoverable on			9	10	11	12	13	14	15
					6	7	8							
Federal ID Number	NAIC Company Code	Name of Reinsured	Domicillary Jurisdition	Assumed Premium	Paid Losses and Loss Adjustment Expenses	Known Case Losses and LAE	Col. 6 + 7	Contingent Commissions Payable	Assumed Premiums Receivable	Unearned Premium	Funds Held by or Depostied With Reinsured Companies	Letters of Credit Posted	Amount of Assets Pledged or Compensating Balances to Secure Letters of Credit	Amount of Assets Pledged or Collateral Held in Trust
Affiliates - U.S. Intercompany Pooling:														
0199999		Affiliates - U.S. Intercompany Pooling:	0	0	0	0	0	0	0	0	0	0	0	0
Affiliates U.S. Non-Pool:														
0299999		Affiliates U.S. Non-Pool - Captive:	0	0	0	0	0	0	0	0	0	0	0	0
0399999		Affiliates U.S. Non-Pool - Other:	0	0	0	0	0	0	0	0	0	0	0	0
0499999		Affiliates U.S. Non-Pool - Total:	0	0	0	0	0	0	0	0	0	0	0	0
Affiliates Other (Non - U.S.):														
0599999		Affiliates - Other (Non - U.S.) - Captive:	0	0	0	0	0	0	0	0	0	0	0	0
0699999		Affiliates - Other (Non - U.S.) - Other:	0	0	0	0	0	0	0	0	0	0	0	0
0799999		Affiliates - Other (Non - U.S.) - Total:	0	0	0	0	0	0	0	0	0	0	0	0
0899999		Total Affiliates	0	0	0	0	0	0	0	0	0	0	0	0
Other U.S. Unaffiliated Insurers														
0999999		Other U. S. Unaffiliated Insurers	0	0	0	0	0	0	0	0	0	0	0	0
Pools and Associations - Mandatory Pools, Associations or Other Similar Facilities														
1099999		Pools and Associations - Mandatory Pools, Associations or Other Similar Facilities	0	0	0	0	0	0	0	0	0	0	0	0
Pools and Associations - Voluntary Pools, Associations or Other Similar Facilities														
1199999		Pools and Associations - Voluntary Pools, Associations or Other Similar Facilities	0	0	0	0	0	0	0	0	0	0	0	0
1299999		Total Pools and Associations	0	0	0	0	0	0	0	0	0	0	0	0
Other Non-US Insurers														
0999999		Other Non-US Insurers	0	0	0	0	0	0	0	0	0	0	0	0
9999999		Totals	0	0	0	0	0	0	0	0	0	0	0	0

SCHEDULE F - PART 2

Premium Portfolio Reinsurance Effected of (Canceled) during Current Year

1 ID Number	2 NAIC Company Code	3 Name of Company	4 Date of Contract	5 Original Premium	6 Reinsurance Premium

NONE

SCHEDULE F - PART 3

Ceded Reinsurance as of December 31, Current Year (000 Omitted)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
						Reinsurance Recoverable On										Reinsurance Payable			
ID Number	NAIC Company Code	Name of Reinsurer	Domiciliary Jurisdiction	Special Code	Reinsurance Premiums Ceded	Paid Losses	Paid LAE	Known Case Loss Reserves	Known Case LAE Reserves	IBNR Loss Reserves	IBNR LAE Reserves	Unearned Premiums	Contingent Commissions	Cols. 7 through 14 Totals	Amount in Dispute Included in Column 15	Ceded Balances Payable	Other Amounts Due to Reinsurers	Net Amount Recoverable From Reinsurers Cols. 15 - [17 + 18]	Funds Held by Company Under Reinsurance Treaties
Authorized																			
Authorized - Affiliates - U.S. Intercompany Pooling:																			
199999	Total Authorized - Affiliates - U.S. Intercompany Pooling				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Authorized - Affiliates - U.S. Non-Pool:																			
11-111	233333	Affiliated Non-Pool			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
499999	Total Authorized - Affiliates - U.S. Non-Pool				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
899999	Authorized - Affiliates				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Authorized - Other U.S. Unaffiliated Insurers:																			
31-123	11111	Good Reinsurer	AL		379	258	0	2,329	116	1,000	174	191	6	4,074	0	0	0	4,074	0
43-145	22222	Overdue Reinsurer	TX		130	10	0	237	12	376	51	59	0	745	4	13	0	732	0
76-345	33333	Slightly Overdue Reinsurer	NY		529	64	0	1,525	75	803	119	282	5	2,873	0	94	0	2,779	0
999999	Authorized - Other U.S. Unaffiliated Insurers				1,038	332	0	4,091	203	2,179	344	532	11	7,692	4	107	0	7,585	0
Authorized - Pools - Voluntary Pools:																			
AA-44111	555555	Pooling Company	NY		111	0	0	203	4	322	49	50	0	628	0	11	0	617	0
1199999	Authorized - Pools - Voluntary Pools				111	0	0	203	4	322	49	50	0	628	0	11	0	617	0
Authorized - Other Non - U.S. Insurers:																			
AA-331234	544445	Foreign Authorized	GB		444	34	0	813	40	1,287	36	201	0	2,411	0	255	0	2,156	0
1299999	Authorized - Other Non - U.S. Insurers				444	34	0	813	40	1,287	36	201	0	2,411	0	255	0	2,156	0
1399999	Authorized - Protected Cells				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1499999	Authorized				1,593	366	0	5,107	247	3,788	429	783	11	10,731	4	373	0	10,358	0
Unauthorized																			
Unauthorized Affiliates:																			
2299999	Unauthorized - Affiliates				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Unauthorized - Other U.S. Unaffiliated Insurers:																			
13-1063	333	Reinsurer A	NY		6	8	0	10	1	16	4	3	0	42	0	1	0	41	20
11-0002	444	Reinsurer B	KS		28	2	0	51	3	80	22	13	0	171	0	3	0	168	0
11-0000	555	Reinsurer C	CA		28	2	0	51	3	58	22	13	0	149	50	3	0	146	20
2399999	Unauthorized - Other U.S. Unaffiliated Insurers				62	12	0	112	7	154	48	29	0	362	50	7	0	355	40
Unauthorized -Other Non - U.S Insurers:																			
12-00001	66666	Reinsurer D	GBR	4	6	1	0	10	1	16	4	3	0	35	0	1	0	34	30
12-00002	77777	Reinsurer E	GBR		20	2	0	51	3	80	22	13	0	171	0	2	0	169	100
2699999	Unauthorized -Other Non - U.S Insurers				26	3	0	61	4	96	26	16	0	206	0	3	0	203	130
2799999	Unauthorized -Protected Cells				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2899999	Unauthorized				88	15	0	173	11	250	74	45	0	568	50	10	0	558	170
Certified																			
Certified - Other Non - U.S. Insurers:																			
CR-1234567	00000	ABC Reinsurance LTD	BMU		137	15	0	39	0	0	0	67	0	121	0	37	0	84	0
CR-2345678	00000	DEF Reinsurance LTD	DEU		53	30	0	24	0	0	0	22	0	76	0	11	0	65	0
CR-3456789	00000	GHI Reinsurance LTD	CHE		11	0	0	0	0	0	0	3	0	3	0	9	0	(6)	0
4099999	Certified - Other Non - U.S. Insurers				201	45	0	63	0	0	0	92	0	200	0	57	0	143	0
4199999	Certified - Protected Cells				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4299999	Certified				201	45	0	63	0	0	0	92	0	200	0	57	0	143	0
4399999	**Total Authorized, Unauthorized & Certified Excluding Protected Cell**				**1,882**	**426**	**0**	**5,343**	**258**	**4,038**	**503**	**920**	**11**	**11,499**	**54**	**440**	**0**	**11,059**	**170**
4499999	**Total Protected Cell**				**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9999999	**Totals - Schedule F, Part 3**				**1,882**	**426**	**0**	**5,343**	**258**	**4,038**	**503**	**920**	**11**	**11,499**	**54**	**440**	**0**	**11,059**	**170**

SCHEDULE F - PART 3

Ceded Reinsurance as of December 31, Current Year (000 Omitted)

		Collateral							Ceded Reinsurance Credit Risk								
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ID Number	Name of Reinsurer From Col. 3	Multiple Beneficiary Trusts	Letters of Credit	Issuing or Confirming Bank Reference Number	Single Beneficiary Trusts & Other Allowable Collateral	Total Funds Held, Payables & Collateral	Net Recoverable Net of Funds Held & Collateral	Applicable Sch. F Penalty (Col. 78)	Total Amount Recoverable From Reinsurers Less Penalty (Cols. 15 - 27)	Stressed Recoverable (Col. 28 * 120%)	Reinsurance Payable & Funds Held (Cols. 17+18+20; but not in excess of Col. 29)	Stressed Net Recoverable (Cols. 29- 30)	Total Collateral (Cols. 21 + 22 + 24, not in Excess of Col. 31)	Stressed Net Recoverable Net of Collateral Offsets (Cols. 31 - 32)	Reinsurer Designation Equivalent	Credit Risk on Collateralized Recoverables (Col. 32 * Factor Applicable to Reinsurer Designation Equivalent in Col. 34)	Credit Risk on Uncollateralized Recoverables (Col. 33 * Factor Applicable to Reinsurer Designation Equivalent in Col. 34)
Authorized																	
Authorized - Affiliates - U.S. Intercompany Pooling:																	
199999	Total Authorized - Affiliates - U.S. Intercompany Pooling	0	0		0	0	0	0	0	0	0	0	0	0		-	-
Authorized - Affiliates - U.S. Non-Pool:																	
11-111	Affiliated Non-Pool	0	0		0	0	0	0	0	0	0	0	0	0		-	-
499999	Total Authorized - Affiliates - U.S. Non-Pool	0	0		0	0	0	0	0	0	0	0	0	0		0	0
899999	Authorized - Affiliates	0	0		0	0	0	0	0	0	0	0	0	0		0	0
Authorized - Other U.S. Unaffiliated Insurers:																	
31-123	Good Reinsurer	0	0		0	0	4,074	0	4,074	4,889	0	4,889	0	4,889	1	-	176
43-145	Overdue Reinsurer	0	515	0004	0	528	217	43	702	842	13	829	515	314	1	19	11
76-345	Slightly Overdue Reinsurer	0	0		0	94	2,779	1	2,872	3,446	94	3,352	0	3,352	2	-	137
999999	Authorized - Other U.S. Unaffiliated Insurers	0	515		0	622	7,070	44	7,648	9,177	107	9,070	515	8,555		19	325
Authorized - Pools - Voluntary Pools:																	
AA-44111	Pooling Company	0	0		0	11	617	0	628	754	11	743	0	743	7	-	74
1199999	Authorized - Pools - Voluntary Pools	0	0		0	11	617	0	628	754	11	743	0	743		0	74
Authorized - Other Non - U.S. Insurers:																	
AA-331234	Foreign Authorized	0	2,500	0008	0	2,411	0	2	2,409	2,891	255	2,636	2,500	136	2	103	6
1299999	Authorized - Other Non - U.S. Insurers	0	2,500		0	2,411	0	2	2,409	2,891	255	2,636	2,500	136		103	6
1399999	Authorized - Protected Cells	0	0		0	0	0	0	0	0	0	0	0	0		-	-
1499999	Authorized	0	3,015		0	3,044	7,687	46	10,685	12,822	373	12,449	3,015	9,434		121	405
Unauthorized																	
Unauthorized Affiliates:																	
2299999	Unauthorized - Affiliates	0	0		0	0	0	0	0	0	0	0	0	0		-	-
Unauthorized - Other U.S. Unaffiliated Insurers:																	
13-1063	Reinsurer A	0	0		0	21	21	22	20	24	21	3	0	3	6	-	0
11-0002	Reinsurer B	0	93	0001	0	96	75	75	96	115	3	112	93	19	6	5	3
11-0000	Reinsurer C	10	0		0	33	116	126	23	28	23	5	5	0	6	0	-
2399999	Unauthorized - Other U.S. Unaffiliated Insurers	10	93		0	150	212	223	139	167	47	120	98	22		5	3
Unauthorized -Other Non - U.S Insurers:																	
12-00001	Reinsurer D	0	0		0	15	0	0	35	42	31	11	0	11	6	-	2
12-00002	Reinsurer E	0	68	0003	0	170	1	1	170	204	102	102	68	34	3	3	2
2699999	Unauthorized -Other Non - U.S Insurers	0	68		0	185	1	1	205	246	133	113	68	45		3	3
2799999	Unauthorized -Protected Cells	0	0		0	0	0	0	0	0	0	0	0	0		-	-
2899999	Unauthorized	10	161		0	335	213	224	344	413	180	233	166	67		8	6
Certified																	
Certified - Other Non - U.S. Insurers:																	
CR-1234567	ABC Reinsurance LTD	0	15	0094	0	52	69	9	112	134	37	97	15	82	2	1	3
CR-2345678	DEF Reinsurance LTD	40	22	0045	0	73	3	4	72	86	11	75	62	13	2	3	1
CR-3456789	GHI Reinsurance LTD	0	0		0	3	0	0	3	4	4	0	0	0	2	-	-
4099999	Certified - Other Non - U.S. Insurers	40	37		0	128	72	13	187	224	52	173	77	96		3	4
4199999	Certified - Protected Cells	0	0		0	0	0	0	0	0	0	0	0	0		-	-
4299999	Certified	40	37		0	128	72	13	187	224	52	173	77	96		3	4
4399999	**Total Authorized, Unauthorized & Certified**	**50**	**3,213**		**0**	**3,507**	**7,972**	**283**	**11,216**	**13,459**	**605**	**12,854**	**3,258**	**9,597**		**132**	**415**
4499999	**Total Protected Cell**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**
9999999	**Totals - Schedule F, Part 3**	**50**	**3,213**		**0**	**3,507**	**7,972**	**283**	**11,216**	**13,459**	**605**	**12,854**	**3,258**	**9,597**		**132**	**415**

SCHEDULE F - PART 3

Ceded Reinsurance as of December 31, Current Year (000 Omitted)

		Reinsurance Recoverable on Paid Losses and Paid Loss Adjustment Expenses							44	45	46	47	48	49	50	51	52	53
		37	Overdue					43										
			38	39	40	41	42											
ID Number From Col. 1	Name of Reinsurer From Col. 3	Current	1 - 29 Days	30 - 90 Days	91 - 120 Days	Over 120 Days	Total Overdue Cols. 38 + 39 + 40 + 41	Total Due Cols. 37 + 42 (In total should equal Cols. 7 + 8)	Total Recoverable on Paid Losses & LAE Amounts in Dispute Included in Col. 43	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute Included in Cols. 40 & 41	Total Recoverable on Paid Losses & LAE Amounts Not in Dispute (Cols 43 - 44)	Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute (Cols. 40 + 41 - 45)	Amounts Received Prior 90 Days	Percentage Overdue Col. 42/Col. 43	Percentage of Amounts More Than 90 Days Overdue Not in Dispute (Col. 47/[Cols. 46 + 48])	Percentage More Than 120 Days Overdue (Col. 41/Col. 43)	Is the Amount in Col. 50 Less Than 20%? (Yes or No)	Amounts in Col. 47 for Reinsurers with Values Less Than 20% in Col. 50
Authorized																		
Authorized - Affiliates - U.S. Intercompany Pooling:																		
199999	Total Authorized - Affiliates - U.S. Intercompany Pooling	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
Authorized - Affiliates - U.S. Non-Pool:																		
11-111	Affiliated Non-Pool	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
499999	Total Authorized - Affiliates - U.S. Non-Pool	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%		0
899999	Authorized - Affiliates	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%		0
Authorized - Other U.S. Unaffiliated Insurers:																		
31-123	Good Reinsurer	248	10	0	0	0	10	258	0	0	258	0	0	3.9%	0.0%	0.0%	YES	0
43-145	Overdue Reinsurer	0	0	0	0	10	10	10	0	0	10	10	0	100.0%	100.0%	100.0%	NO	0
76-345	Slightly Overdue Reinsurer	54	0	5	5	0	10	64	4	0	60	5	0	15.6%	8.3%	0.0%	YES	5
999999	Authorized - Other U.S. Unaffiliated Insurers	302	10	5	5	10	30	332	4	0	328	15	0	9.0%	4.6%	3.0%		5
Authorized - Pools - Voluntary Pools:																		
AA-44111	Pooling Company	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
1199999	Authorized - Pools - Voluntary Pools	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%		0
Authorized - Other Non - U.S. Insurers:																		
AA-331234	Foreign Authorized	26	0	0	8	0	8	34	0	0	34	8	0	23.5%	23.5%	0.0%	NO	0
1299999	Authorized - Other Non - U.S. Insurers	26	0	0	8	0	8	34	0	0	34	8	0	23.5%	23.5%	0.0%		0
1399999	Authorized - Protected Cells	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
1499999	Authorized	328	10	5	13	10	38	366	4	0	362	23	0	10.4%	6.4%	2.7%		5
Unauthorized																		
Unauthorized Affiliates:																		
2299999	Unauthorized - Affiliates	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
Unauthorized - Other U.S. Unaffiliated Insurers:																		
13-1063	Reinsurer A	3	0	0	5	0	5	8	0	0	8	5	0	59.3%	59.3%	0.0%	NO	0
11-0002	Reinsurer B	1	0	0	1	0	1	2	0	0	2	1	0	50.0%	50.0%	0.0%	NO	0
11-0000	Reinsurer C	2	0	0	0	0	0	2	2	0	0	0	0	0.0%	0.0%	0.0%	YES	0
2399999	Unauthorized - Other U.S. Unaffiliated Insurers	6	0	0	6	0	6	12	2	0	10	6	0	48.3%	57.6%	0.0%		0
Unauthorized -Other Non - U.S Insurers:																		
12-00001	Reinsurer D	0	1	0	0	0	1	1	0	0	1	0	0	100.0%	0.0%	0.0%	YES	0
12-00002	Reinsurer E	2	0	0	0	0	0	2	0	0	2	0	0	0.0%	0.0%	0.0%	YES	0
2699999	Unauthorized -Other Non - U.S Insurers	2	1	0	0	0	1	3	0	0	3	0	0	33.3%	0.0%	0.0%		0
2799999	Unauthorized -Protected Cells	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
2899999	Unauthorized	8	1	0	6	0	7	15	2	0	13	6	0	45.4%	44.7%	0.0%		0
Certified																		
Certified - Other Non - U.S. Insurers:																		
CR-1234567	ABC Reinsurance LTD	15	0	0	0	0	0	15	0	0	15	0	9	0.0%	0.0%	0.0%	YES	0
CR-2345678	DEF Reinsurance LTD	10	0	0	20	0	20	30	0	0	30	20	20	66.7%	40.0%	0.0%	NO	0
CR-3456789	GHI Reinsurance LTD	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
4099999	Certified - Other Non - U.S. Insurers	25	0	0	20	0	20	45	0	0	45	20	29	44.4%	27.0%	0.0%		0
4199999	Certified - Protected Cells	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	0.0%	0.0%	YES	0
4299999	Certified	25	0	0	20	0	20	45	0	0	45	20	29	44.4%	27.0%	0.0%		0
4399999	**Total Authorized, Unauthorized & Certified**	**361**	**11**	**5**	**39**	**10**	**65**	**426**	**6**	**0**	**420**	**49**	**29**	**15.2%**	**10.9%**	**2.3%**		**5**
4499999	**Total Protected Cell**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0%**	**0.0%**	**0.0%**		**0**
9999999	**Totals - Schedule F, Part 3**	**361**	**11**	**5**	**39**	**10**	**65**	**426**	**6**	**0**	**420**	**49**	**29**	**15.2%**	**10.9%**	**2.3%**		**5**

SCHEDULE F - PART 3

Ceded Reinsurance as of December 31, Current Year (000 Omitted)

		Provision for Certified Reinsurance																
		54	55	56	57	58	59	60	61	62	63	64	65	Complete if Col. 52 = "No"; Otherwise Enter 0			69
														66	67	68	
ID Number From Col. 1	Name of Reinsurer From Col. 3	Certified Reinsurer Rating (1 through 6)	Effective Date of Certified Reinsurer Rating	Percent Collateral Required for Full Credit (0% through 100%)	Catastrophe Recoverables Qualifying for Collateral Deferral	Net Recoverables Subject to Collateral Requirements for Full Credit (Col. 19 - Col. 57)	Dollar Amount of Collateral Required (Col. 56 * Col. 58)	Percent of Collateral Provided for Net Recoverables Subject to Collateral Requirements ([Col. 20+Col. 21+ Col. 22+ Col.24] / Col. 58)	Percent Credit Allowed on Net Recoverables Subject to Collateral Requirements (Col. 60 / Col. 56, not to exceed 100%)	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts in Dispute (Col. 45 * 20%)	Amount of Credit Allowed for Net Recoverables (Col. 57 +[Col. 58 * Col. 61])	Provision for Reinsurance with Certified Reinsurers Due to Collateral Deficiency (Col. 19 - Col. 63)	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute (Col. 47 * 20%)	Total Collateral Provided (Col. 20 +Col. 21+ Col. 22+ Col.24; not to Exceed Col. 63)	Net Unsecured Recoverable for Which Credit is Allowed (Col. 63 - Col. 66)	20% of Amount in Col. 67	Provision for Overdue Reinsurance Ceded to Certified Reinsurers (Greater of [Col. 62 + Col. 65] or Col.68; not to Exceed Col. 63)
Authorized																		
Authorized - Affiliates - U.S. Intercompany Pooling:																		
199999	Total Authorized - Affiliates - U.S. Intercompany Pooling	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Authorized - Affiliates - U.S. Non-Pool:																		
11-111	Affiliated Non-Pool	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
499999	Total Authorized - Affiliates - U.S. Non-Pool	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
899999	Authorized - Affiliates	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Authorized - Other U.S. Unaffiliated Insurers:																		
31-123	Good Reinsurer	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
43-145	Overdue Reinsurer	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
76-345	Slightly Overdue Reinsurer	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
999999	Authorized - Other U.S. Unaffiliated Insurers	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Authorized - Pools - Voluntary Pools:																		
AA-44111	Pooling Company	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
1199999	Authorized - Pools - Voluntary Pools	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Authorized - Other Non - U.S. Insurers:																		
AA-331234	Foreign Authorized	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
1299999	Authorized - Other Non - U.S. Insurers	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
1399999	Authorized - Protected Cells	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
1499999	Authorized	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Unauthorized																		
Unauthorized Affiliates:																		
2299999	Unauthorized - Affiliates	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Unauthorized - Other U.S. Unaffiliated Insurers:																		
13-1063	Reinsurer A	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
11-0002	Reinsurer B	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
11-0000	Reinsurer C	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2399999	Unauthorized - Other U.S. Unaffiliated Insurers	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Unauthorized -Other Non - U.S Insurers:																		
12-00001	Reinsurer D	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
12-00002	Reinsurer E	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2699999	Unauthorized -Other Non - U.S Insurers	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2799999	Unauthorized -Protected Cells	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
2899999	Unauthorized	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
Certified																		
Certified - Other Non - U.S. Insurers:																		
CR-1234567	ABC Reinsurance LTD	3	4/9/2015	20.0	0	84	17	17.9	89.3	0	75	9	0	0	0	0	0	
CR-2345678	DEF Reinsurance LTD	2	4/13/2015	10.0	0	65	7	95.4	100.0	0	65	0	4	62	3	1	4	
CR-3456789	GHI Reinsurance LTD	2	6/21/2016	10.0	0	(6)	(1)	-	0.0	0	0	0	0	0	0	0	0	
4099999	Certified - Other Non - U.S. Insurers				0	143	23	53.8	0.0	0	140	9	4	62	3	1	4	
4199999	Certified - Protected Cells				0	0	0	-	0.0	0	0	0	0	0	0	0	0	
4299999	Certified				0	143	23	53.8	0.0	0	140	9	4	62	3	1	4	
4399999	**Total Authorized, Unauthorized & Certified**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	
4499999	**Total Protected Cell**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	
9999999	**Totals - Schedule F, Part 3**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	**XXX**	

SCHEDULE F - PART 3

Ceded Reinsurance as of December 31, Current Year (000 Omitted)

		70	Provision for Unauthorized Reinsurance		Provision for Overdue Authorized Reinsurance		Total Provision for Reinsurance			
			71	72	73	74	75	76	77	78
ID Number From Col. 1	Name of Reinsurer From Col. 3	20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute (Col. 47 * 20%)	Provision for Reinsurance with Unauthorized Reinsurers Due to Collateral Deficiency (Col. 26)	Provision for Overdue Reinsurance from Unauthorized Reinsurers and Amounts in Dispute (Col. 70 + 20% of the Amount in Col. 16)	Complete if Col. 52 = "Yes"; Otherwise Enter 0 20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due Amounts Not in Dispute + 20% of Amounts in Dispute ([Col. 47 * 20%] + [Col. 45 * 20%])	Complete if Col. 52 = "No"; Otherwise Enter 0 Greater of 20% of Net Recoverable Net of Funds Held & Collateral, or 20% of Recoverable on Paid Losses & LAE Over 90 Days Past Due (Greater of Col 26 * 20% or [Cols. 40 + 41] * 20%)	Provision for Amounts Ceded to Authorized Reinsurers (Cols. 73 + 74)	Provision for Amounts Ceded to Unauthorized Reinsurers (Cols. 71 + 72 Not in Excess of Col. 15)	Provision for Amounts Ceded to Certified Reinsurers (Cols. 64 + 69)	Total Provision for Reinsurance (Cols. 75 + 76 +77)
Authorized										
Authorized - Affiliates - U.S. Intercompany Pooling:										
199999	Total Authorized - Affiliates - U.S. Intercompany Pooling	0	XXX	XXX	0	0	0	XXX	XXX	-
Authorized - Affiliates - U.S. Non-Pool:										
11-111	Affiliated Non-Pool	0	XXX	XXX	0	0	0	XXX	XXX	-
499999	Total Authorized - Affiliates - U.S. Non-Pool	0	XXX	XXX	0	0	0	XXX	XXX	-
899999	Authorized - Affiliates	0	XXX	XXX	0	0	0	XXX	XXX	-
Authorized - Other U.S. Unaffiliated Insurers:										
31-123	Good Reinsurer	0	XXX	XXX	0	0	0	XXX	XXX	-
43-145	Overdue Reinsurer	2	XXX	XXX	0	43	43	XXX	XXX	43
76-345	Slightly Overdue Reinsurer	1	XXX	XXX	1	0	1	XXX	XXX	1
999999	Authorized - Other U.S. Unaffiliated Insurers	3	XXX	XXX	1	43	44	XXX	XXX	44
Authorized - Pools - Voluntary Pools:										
AA-44111	Pooling Company	0	XXX	XXX	0	0	0	XXX	XXX	-
1199999	Authorized - Pools - Voluntary Pools	0	XXX	XXX	0	0	0	XXX	XXX	-
Authorized - Other Non - U.S. Insurers:										
AA-331234	Foreign Authorized	2	XXX	XXX	0	2	2	XXX	XXX	2
1299999	Authorized - Other Non - U.S. Insurers	2	XXX	XXX	0	2	2	XXX	XXX	2
1399999	Authorized - Protected Cells	0	XXX	XXX	0	0	0	XXX	XXX	-
1499999	Authorized	5	XXX	XXX	1	45	46	XXX	XXX	46
Unauthorized										
Unauthorized Affiliates:										
2299999	Unauthorized - Affiliates	0	0	0	XXX	XXX	XXX	0	XXX	-
Unauthorized - Other U.S. Unaffiliated Insurers:										
13-1063	Reinsurer A	1	21	1	XXX	XXX	XXX	22	XXX	22
11-0002	Reinsurer B	0	75	0	XXX	XXX	XXX	75	XXX	75
11-0000	Reinsurer C	0	116	10	XXX	XXX	XXX	126	XXX	126
2399999	Unauthorized - Other U.S. Unaffiliated Insurers	1	212	11	XXX	XXX	XXX	223	XXX	223
Unauthorized -Other Non - U.S Insurers:										
12-00001	Reinsurer D	0	0	0	XXX	XXX	XXX	0	XXX	-
12-00002	Reinsurer E	0	1	0	XXX	XXX	XXX	1	XXX	1
2699999	Unauthorized -Other Non - U.S Insurers	0	1	0	XXX	XXX	XXX	1	XXX	1
2799999	Unauthorized -Protected Cells	0	0	0	XXX	XXX	XXX	0	XXX	-
2899999	Unauthorized	1	213	11	XXX	XXX	XXX	224	XXX	224
Certified										
Certified - Other Non - U.S. Insurers:										
CR-1234567	ABC Reinsurance LTD	0	XXX	XXX	XXX	XXX	XXX	XXX	9	9
CR-2345678	DEF Reinsurance LTD	4	XXX	XXX	XXX	XXX	XXX	XXX	4	4
CR-3456789	GHI Reinsurance LTD	0	XXX	XXX	XXX	XXX	XXX	XXX	0	0
4099999	Certified - Other Non - U.S. Insurers	4	XXX	XXX	XXX	XXX	XXX	XXX	13	13
4199999	Certified - Protected Cells	0	XXX	XXX	XXX	XXX	XXX	XXX	0	0
4299999	Certified	4	XXX	XXX	XXX	XXX	XXX	XXX	13	13
4399999	**Total Authorized, Unauthorized & Certified**	**10**	**213**	**11**	**1**	**45**	**46**	**224**	**13**	**283**
4499999	**Total Protected Cell**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9999999	**Totals - Schedule F, Part 3**	**10**	**213**	**11**	**1**	**45**	**46**	**224**	**13**	**283**

SCHEDULE P - ANALYSIS OF LOSSES AND LOSS EXPENSES
SCHEDULE P - PART 1 - SUMMARY

($000 Omitted)

Years in Which Premiums Were Earned and Losses Were Incurred	Premiums Earned			Loss and Loss Expense Payments								12
				Loss Payments		Defense and Cost Containment Payments		Adjusting and Other Payments		10	11	
	1 Direct and Assumed	2 Ceded	3 Net (Cols. 1 - 2)	4 Direct and Assumed	5 Ceded	6 Direct and Assumed	7 Ceded	8 Direct and Assumed	9 Ceded	Salvage and Subrogation Received	Total Net Paid (Cols. 4 - 5 + 6 - 7 + 8	Number of Claims Reported - Direct and Assumed
1. Prior	XXX	XXX	XXX	1,265	581	442	23	198	2	42	1,299	XXX
2. 2009	27,202	5,678	21,524	14,055	3,356	1,745	242	827	84	547	12,945	XXX
3. 2010	29,689	6,266	23,422	13,058	2,121	1,490	189	837	79	559	12,996	XXX
4. 2011	29,397	5,032	24,364	11,877	2,011	1,220	153	912	84	563	11,761	XXX
5. 2012	28,326	4,049	24,276	13,535	3,577	1,120	158	936	61	512	11,795	XXX
6. 2013	27,863	3,423	24,440	10,182	1,252	965	91	1,046	31	523	10,819	XXX
7. 2014	28,334	2,957	25,377	10,595	997	976	71	1,127	25	603	11,605	XXX
8. 2015	28,461	2,945	25,515	12,605	1,320	909	64	1,308	19	592	13,419	XXX
9. 2016	27,970	2,352	25,618	10,418	712	662	35	1,258	13	495	11,578	XXX
10. 2017	27,678	2,143	25,535	9,834	525	490	25	1,257	11	499	11,020	XXX
11. 2018	28,598	2,085	26,512	8,853	423	247	16	1,124	8	348	9,777	XXX
12. Totals	XXX	XXX	XXX	116,277	16,875	10,266	1,067	10,830	417	5,283	119,014	XXX

	Losses Unpaid				Defense and Cost Containment Unpaid				Adjusting and Other Unpaid		23	24	25
	Case Basis		Bulk + IBNR		Case Basis		Bulk + IBNR						
	13 Direct and Assumed	14 Ceded	15 Direct and Assumed	16 Ceded	17 Direct and Assumed	18 Ceded	19 Direct and Assumed	20 Ceded	21 Direct and Assumed	22 Ceded	Salvage and Subrogation Anticipated	Total Net Losses and Expenses Unpaid	Number of Claims Outstanding - Direct and Assumed
1. Prior	9,567	2,968	7,719	1,416	908	165	1,545	138	1,024	3	23	16,073	XXX
2. 2009	665	219	645	139	57	9	168	35	43	0	4	1,176	XXX
3. 2010	617	110	779	235	70	12	160	29	129	1	36	1,368	XXX
4. 2011	601	162	686	200	61	5	159	30	47	0	19	1,157	XXX
5. 2012	664	208	956	271	65	9	175	28	46	0	29	1,390	XXX
6. 2013	834	176	1,141	249	92	5	193	23	65	0	38	1,872	XXX
7. 2014	924	128	1,427	290	135	7	298	25	70	0	72	2,404	XXX
8. 2015	1,619	165	1,690	288	195	9	456	48	135	0	144	3,585	XXX
9. 2016	2,028	363	2,255	282	240	10	539	50	160	0	175	4,517	XXX
10. 2017	2,827	219	3,224	287	283	12	739	47	231	0	269	6,739	XXX
11. 2018	4,599	625	5,808	381	318	15	969	46	649	0	554	11,276	XXX
12. Totals	24,945	5,343	26,330	4,038	2,424	258	5,401	499	2,599	4	1,363	51,557	XXX

	Total Losses and Loss Expenses Incurred			Loss and Loss Expense Percentage (Incurred /Premiums Earned)			Nontabular Discount		34	Net Balance Sheet Reserves after Discount	
	26 Direct and Assumed	27 Ceded	28 Net (Cols. 26 - 27)	29 Direct and Assumed	30 Ceded	31 Net	32 Loss	33 Loss Expense	Inter-Pooling Participation Percentage	35 Losses Unpaid	36 Loss Expenses Unpaid
1. Prior	XXX	XXX	XXX	XXX	XXX	XXX	0	0	XXX	12,902	3,171
2. 2009	18,205	4,084	14,121	66.9	71.9	65.6	0	0	XXX	952	224
3. 2010	17,140	2,776	14,364	57.7	44.3	61.3	0	0	XXX	1,051	317
4. 2011	15,563	2,645	12,918	52.9	52.6	53.0	0	0	XXX	925	232
5. 2012	17,497	4,312	13,185	61.8	106.5	54.3	0	0	XXX	1,141	249
6. 2013	14,518	1,827	12,691	52.1	53.4	51.9	0	0	XXX	1,550	322
7. 2014	15,552	1,543	14,009	54.9	52.2	55.2	0	0	XXX	1,933	471
8. 2015	18,917	1,913	17,004	66.5	65.0	66.6	0	0	XXX	2,856	729
9. 2016	17,560	1,465	16,095	62.8	62.3	62.8	0	0	XXX	3,638	879
10. 2017	18,885	1,126	17,759	68.2	52.5	69.5	0	0	XXX	5,545	1,194
11. 2018	22,567	1,514	21,053	78.9	72.6	79.4	0	0	XXX	9,401	1,875
12. Totals	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	41,894	9,663

SCHEDULE P -PART 2 - SUMMARY

Years in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost containment Expenses Reported at Year End ($000 omitted)										DEVELOPMENT	
	1	2	3	4	5	6	7	8	9	10	11	12
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	One Year	Two Year
1. Prior	35,994	38,360	41,784	43,601	44,861	45,378	45,947	45,884	45,845	46,022	177	138
2. 2009	14,249	13,109	13,545	13,763	13,842	13,778	13,722	13,657	13,408	13,387	(21)	(270)
3. 2010	XXX	14,434	13,651	14,040	13,994	14,032	14,042	13,748	13,617	13,540	(77)	(208)
4. 2011	XXX	XXX	15,733	14,265	13,630	13,209	12,726	12,485	12,288	12,099	(189)	(386)
5. 2012	XXX	XXX	XXX	15,982	14,733	14,195	13,210	12,768	12,445	12,321	(124)	(447)
6. 2013	XXX	XXX	XXX	XXX	13,501	13,051	12,370	12,056	11,837	11,679	(158)	(377)
7. 2014	XXX	XXX	XXX	XXX	XXX	13,938	13,629	13,303	13,265	12,895	(370)	(408)
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	15,980	16,106	16,015	15,635	(380)	(471)
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	14,917	14,851	14,745	(106)	(172)
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	15,972	16,345	373	XXX
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	19,364	XXX	XXX
										12. Totals	(875)	(2,601)

SCHEDULE P -PART 3 - SUMMARY

Years in Which Losses Were Incurred	Cummulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)										11	12
	1	2	3	4	5	6	7	8	9	10	Number of Claims Closed with Loss Payment	Number of Claims Closed Without Loss Payment
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1. Prior	0	9,061	13,830	18,110	21,281	23,728	26,341	27,752	29,108	30,210	XXX	XXX
2. 2009	3,881	6,637	8,297	9,620	10,627	11,289	11,686	11,961	12,108	12,202	XXX	XXX
3. 2010	XXX	4,121	7,109	9,011	10,142	11,035	11,552	11,847	12,070	12,238	XXX	XXX
4. 2011	XXX	XXX	4,061	6,981	8,385	9,439	10,067	10,485	10,772	10,933	XXX	XXX
5. 2012	XXX	XXX	XXX	4,376	7,649	8,904	9,766	10,329	10,724	10,919	XXX	XXX
6. 2013	XXX	XXX	XXX	XXX	4,208	6,630	7,898	8,803	9,481	9,804	XXX	XXX
7. 2014	XXX	XXX	XXX	XXX	XXX	4,591	7,325	8,821	9,846	10,503	XXX	XXX
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	6,026	9,265	10,971	12,130	XXX	XXX
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	5,626	8,740	10,332	XXX	XXX
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	6,278	9,774	XXX	XXX
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	8,660	XXX	XXX

SCHEDULE P -PART 4 - SUMMARY

Years in Which Losses Were Incurred	Bulk and IBNR Reserves on Net Losses and Defense Cost Containment Expenses Reported at Year End ('000 omitted)									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	17,126	14,330	13,764	12,807	12,285	11,632	10,529	9,752	8,907	8,088
2. 2009	7,093	3,349	2,393	1,821	1,445	1,249	1,121	1,010	728	677
3. 2010	XXX	7,149	3,583	2,544	1,799	1,479	1,370	1,016	814	713
4. 2011	XXX	XXX	8,512	4,667	3,068	2,149	1,505	1,122	864	651
5. 2012	XXX	XXX	XXX	7,337	4,644	3,505	2,131	1,522	1,030	876
6. 2013	XXX	XXX	XXX	XXX	6,333	4,175	2,757	1,959	1,440	1,114
7. 2014	XXX	XXX	XXX	XXX	XXX	6,022	3,756	2,640	2,018	1,459
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	6,400	3,932	2,810	1,850
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	6,008	3,544	2,511
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	5,817	3,682
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	6,422

SCHEDULE P - ANALYSIS OF LOSSES AND LOSS EXPENSES

SCHEDULE P - PART 1A - HOMEOWNERS/FARMOWNERS

($000 Omitted)

Years in Which Premiums Were Earned and Losses Were Incurred	Premiums Earned			Loss and Loss Expense Payments								12
				Loss Payments		Defense and Cost Containment Payments		Adjusting and Other Payments		10	11	Number of Claims Reported - Direct and Assumed
	1 Direct and Assumed	2 Ceded	3 Net (Cols. 1 - 2)	4 Direct and Assumed	5 Ceded	6 Direct and Assumed	7 Ceded	8 Direct and Assumed	9 Ceded	Salvage and Subrogation Received	Total Net Paid (Cols. 4 - 5 + 6 - 7 + 8 - 9)	
1. Prior	XXX	XXX	XXX	2	0	0	0	0	0	0	2	XXX
2. 2009	1,931	168	1,763	983	75	38	4	97	4	18	1,035	242
3. 2010	2,251	167	2,084	1,129	59	40	4	114	0	20	1,220	253
4. 2011	2,721	109	2,612	1,375	65	73	4	130	0	21	1,509	219
5. 2012	3,123	123	3,000	1,585	272	56	1	162	0	26	1,530	217
6. 2013	3,307	76	3,231	1,302	1	40	0	193	0	36	1,534	216
7. 2014	3,609	102	3,507	1,343	2	46	0	212	0	63	1,599	194
8. 2015	3,816	103	3,713	2,093	1	53	0	268	0	39	2,413	300
9. 2016	4,003	108	3,895	2,099	6	54	0	257	0	37	2,404	296
10. 2017	4,294	116	4,178	2,249	2	48	0	294	0	27	2,589	325
11. 2018	4,550	105	4,445	2,968	3	38	0	343	0	10	3,346	427
12. Totals	XXX	XXX	XXX	17,128	486	486	13	2,073	4	297	19,184	XXX

	Losses Unpaid				Defense and Cost Containment Unpaid				Adjusting and Other Unpaid		23	24	25
	Case Basis		Bulk + IBNR		Case Basis		Bulk + IBNR					Total Net	
	13 Direct and Assumed	14 Ceded	15 Direct and Assumed	16 Ceded	17 Direct and Assumed	18 Ceded	19 Direct and Assumed	20 Ceded	21 Direct and Assumed	22 Ceded	Salvage and Subrogation Anticipated	Losses and Expenses Unpaid	Number of Claims Outstanding Direct and Assumed
1. Prior	4	0	0	0	0	0	0	0	3	0	0	7	1
2. 2009	0	0	0	0	0	0	0	0	3	0	0	3	1
3. 2010	1	0	0	0	0	0	0	0	3	0	0	4	1
4. 2011	2	0	0	0	0	0	0	0	3	0	0	5	1
5. 2012	3	3	58	13	0	0	0	0	3	0	1	48	1
6. 2013	8	0	0	1	0	0	0	0	3	0	2	10	1
7. 2014	16	0	0	0	2	0	0	0	3	0	4	21	1
8. 2015	37	0	13	1	3	0	3	0	2	0	8	57	1
9. 2016	55	0	7	(3)	6	0	7	0	4	0	13	82	1
10. 2017	115	0	69	0	9	0	8	0	9	0	28	210	3
11. 2018	351	0	587	0	15	0	4	0	56	0	66	1,013	21
12. Totals	592	3	734	12	35	0	22	0	89	0	122	1,457	33

	Total Losses and Loss Expenses Incurred			Loss and Loss Expense Percentage (Incurred /Premiums Earned)			Nontabular Discount		34	Net Balance Sheet Reserves after Discount	
	26 Direct and Assumed	27 Ceded	28 Net (Cols. 26 - 27)	29 Direct and Assumed	30 Ceded	31 Net	32 Loss	33 Loss Expense	Inter-Company Pooling Participation Percentage	35 Losses Unpaid	36 Loss Expenses Unpaid
1. Prior	XXX	XXX	XXX	XXX	XXX	XXX	0	0	XXX	4	3
2. 2009	1,121	83	1,038	58.1	49.4	58.9	0	0	XXX	0	3
3. 2010	1,287	63	1,224	57.2	37.7	58.7	0	0	XXX	1	3
4. 2011	1,583	69	1,514	58.2	63.3	58.0	0	0	XXX	2	3
5. 2012	1,867	289	1,578	59.8	235.0	52.6	0	0	XXX	45	3
6. 2013	1,546	2	1,544	46.7	2.6	47.8	0	0	XXX	7	3
7. 2014	1,622	2	1,620	44.9	2.0	46.2	0	0	XXX	16	5
8. 2015	2,472	2	2,470	64.8	1.9	66.5	0	0	XXX	49	8
9. 2016	2,489	3	2,486	62.2	2.8	63.8	0	0	XXX	65	17
10. 2017	2,801	2	2,799	65.2	1.7	67.0	0	0	XXX	184	26
11. 2018	4,362	3	4,359	95.9	2.9	98.1	0	0	XXX	938	75
12. Totals	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,311	146

SCHEDULE P - ANALYSIS OF LOSSES AND LOSS EXPENSES

SCHEDULE P - PART 1C-COMMERCIAL AUTO

($000 Omitted)

Years in Which Premiums Were Earned and Losses were Incurred	Premiums Earned			Loss and Loss Expense Payments								12
				Loss Payments		Defense and Cost Containment Payments		Adjusting and Other Payments		10	11	Number of Claims Reported - Direct and Assumed
	1 Direct and Assumed	2 Ceded	3 Net (Cols. 1 - 2)	4 Direct and Assumed	5 Ceded	6 Direct and Assumed	7 Ceded	8 Direct and Assumed	9 Ceded	Salvage and Subrogation Received	Total Net Paid (Cols. 4 - 5 + 6 - 7 + 8 - 9)	
1. Prior	XXX	XXX	XXX	17	6	3	0	15	0	(1)	29	XXX
2. 2009	2,906	545	2,361	1,607	318	149	39	105	6	20	1,498	219
3. 2010	3,128	507	2,620	1,555	254	141	29	99	4	15	1,509	195
4. 2011	2,879	489	2,389	1,363	227	125	26	106	4	15	1,336	177
5. 2012	2,904	388	2,515	1,175	152	120	24	104	3	12	1,220	155
6. 2013	2,592	271	2,321	1,094	138	103	21	104	3	16	1,140	143
7. 2014	2,476	150	2,326	1,134	102	110	18	116	2	14	1,238	139
8. 2015	2,387	173	2,213	1,001	83	91	12	138	1	12	1,133	149
9. 2016	2,374	142	2,232	794	39	55	5	107	1	12	911	128
10. 2017	2,302	113	2,190	608	25	28	2	103	1	12	711	132
11. 2018	2,305	83	2,222	307	8	7	1	73	1	7	378	134
12. Totals	XXX	XXX	XXX	10,654	1,349	932	177	1,069	27	134	11,103	XXX

	Losses Unpaid				Defense and Cost Containment Unpaid				Adjusting and Other Unpaid		23	24	25
	Case Basis		Bulk + IBNR		Case Basis		Bulk + IBNR					Total Net Losses and Expenses Unpaid	Number of Claims Outstanding Direct and Assumed
	13 Direct and Assumed	14 Ceded	15 Direct and Assumed	16 Ceded	17 Direct and Assumed	18 Ceded	19 Direct and Assumed	20 Ceded	21 Direct and Assumed	22 Ceded	Salvage and Subrogation Anticipated		
1. Prior	186	136	71	21	4	1	11	1	2	0	0	115	1
2. 2009	7	2	18	2	1	0	5	1	2	0	0	28	1
3. 2010	13	4	25	5	4	2	4	(1)	2	0	0	38	1
4. 2011	14	2	39	14	2	0	5	1	2	0	0	45	1
5. 2012	90	27	45	15	5	(0)	17	4	2	0	0	114	1
6. 2013	48	4	56	7	7	1	8	0	2	0	0	109	1
7. 2014	103	9	60	15	12	2	6	1	4	0	1	158	2
8. 2015	208	12	78	25	22	2	9	1	8	0	1	284	4
9. 2016	325	27	156	10	31	2	22	3	15	0	2	506	7
10. 2017	498	45	268	18	37	3	41	2	27	0	4	804	13
11. 2018	529	18	573	17	35	2	62	1	89	0	8	1,250	42
12. Totals	2,020	285	1,389	150	159	15	190	13	156	1	18	3,451	74

	Total Losses and Loss Expenses Incurred			Loss and Loss Expense Percentage (Incurred /Premiums Earned)			Nontabular Discount		34	Net Balance Sheet Reserves after Discount	
	26 Direct and Assumed	27 Ceded	28 Net (Cols. 26 - 27)	29 Direct and Assumed	30 Ceded	31 Net	32 Loss	33 Loss Expense	Inter-Company Pooling Participation Percentage	35 Losses Unpaid	36 Loss Expenses Unpaid
1. Prior	XXX	XXX	XXX	XXX	XXX	XXX	0	0	XXX	100	15
2. 2009	1,894	368	1,526	65.2	67.4	64.6	0	0	XXX	20	8
3. 2010	1,844	297	1,547	59.0	58.5	59.0	0	0	XXX	29	9
4. 2011	1,654	274	1,381	57.5	56.0	57.8	0	0	XXX	36	9
5. 2012	1,558	224	1,334	53.7	57.8	53.0	0	0	XXX	94	20
6. 2013	1,422	173	1,249	54.9	63.9	53.8	0	0	XXX	93	16
7. 2014	1,545	148	1,397	62.4	98.6	60.1	0	0	XXX	139	19
8. 2015	1,554	137	1,417	65.1	78.9	64.0	0	0	XXX	249	35
9. 2016	1,504	88	1,416	63.4	61.8	63.5	0	0	XXX	443	62
10. 2017	1,610	95	1,515	69.9	84.4	69.2	0	0	XXX	704	100
11. 2018	1,675	47	1,628	72.7	57.1	73.3	0	0	XXX	1,068	182
12. Totals	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,975	476

SCHEDULE P -PART 2A-HOMEOWNERS/FARMOWNERS

Years in Which Losses Were Incurred	Incurred Net Losses and Defense and Cost containment Expenses Reported at Year End ($000 omitted)										DEVELOPMENT	
	1	2	3	4	5	6	7	8	9	10	11	12
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	One Year	Two Year
1. Prior	316	260	238	227	215	205	204	207	206	206	0	(1)
2. 2009	1,152	980	948	948	947	945	945	943	943	942	(1)	(1)
3. 2010	XXX	1,349	1,126	1,138	1,116	1,113	1,110	1,109	1,108	1,107	(1)	(2)
4. 2011	XXX	XXX	1,362	1,387	1,386	1,379	1,382	1,377	1,378	1,381	3	4
5. 2012	XXX	XXX	XXX	1,850	1,596	1,608	1,519	1,418	1,405	1,413	8	(5)
6. 2013	XXX	XXX	XXX	XXX	1,369	1,355	1,342	1,352	1,354	1,348	(6)	(4)
7. 2014	XXX	XXX	XXX	XXX	XXX	1,493	1,471	1,401	1,406	1,405	(1)	4
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	2,236	2,234	2,210	2,200	(10)	(34)
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,179	2,239	2,225	(14)	46
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,577	2,496	(81)	XXX
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	3,960	XXX	XXX
										12. Totals	(103)	7

SCHEDULE P -PART 2C-COMMERCIAL AUTO/TRUCK LIABILITY/MEDICAL

Losses Were	Incurred Net Losses and Defense and Cost containment Expenses Reported at Year End ($000 omitted)										DEVELOPMENT	
	1	2	3	4	5	6	7	8	9	10	11	12
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	One Year	Two Year
1. Prior	1,852	2,032	1,994	2,069	2,041	1,962	1,968	1,966	1,957	1,980	23	14
2. 2009	1,551	1,502	1,527	1,519	1,514	1,478	1,467	1,461	1,426	1,425	(1)	(36)
3. 2010	XXX	1,672	1,636	1,594	1,566	1,535	1,499	1,483	1,451	1,449	(2)	(34)
4. 2011	XXX	XXX	1,649	1,483	1,393	1,349	1,325	1,317	1,292	1,277	(15)	(40)
5. 2012	XXX	XXX	XXX	1,462	1,383	1,314	1,265	1,267	1,255	1,230	(25)	(37)
6. 2013	XXX	XXX	XXX	XXX	1,331	1,273	1,208	1,171	1,163	1,146	(17)	(25)
7. 2014	XXX	XXX	XXX	XXX	XXX	1,403	1,353	1,235	1,299	1,279	(20)	44
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	1,368	1,177	1,264	1,273	9	96
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,318	1,240	1,296	56	(22)
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,294	1,387	93	XXX
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,467	XXX	XXX
										12. Totals	101	(40)

SCHEDULE P -PART 3A - HOMEOWNERS/FARMOWNERS

Years in Which Losses Were Incurred	Cummulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)										11	12
	1	2	3	4	5	6	7	8	9	10	Number of Claims Closed with Loss Payment	Number of Claims Closed Without Loss Payment
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1. Prior	0	96	146	168	183	189	195	198	200	202	0	0
2. 2009	634	865	902	922	933	937	940	941	941	942	203	38
3. 2010	XXX	768	1,025	1,070	1,090	1,099	1,102	1,103	1,105	1,106	218	34
4. 2011	XXX	XXX	821	1,245	1,321	1,347	1,360	1,368	1,373	1,379	184	34
5. 2012	XXX	XXX	XXX	936	1,296	1,318	1,345	1,348	1,359	1,368	189	27
6. 2013	XXX	XXX	XXX	XXX	936	1,239	1,299	1,325	1,339	1,341	195	19
7. 2014	XXX	XXX	XXX	XXX	XXX	961	1,302	1,342	1,373	1,387	177	16
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	1,512	2,009	2,099	2,145	275	23
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,556	2,063	2,147	269	25
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	1,740	2,295	296	25
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	3,003	382	24

SCHEDULE P -PART 3C - COMMERCIAL AUTO/TRUCK LIABILITY/MEDICAL

Years in Which Losses Were Incurred	Cummulative Paid Net Losses and Defense and Cost Containment Expenses Reported at Year End ($000 omitted)										11	12
	1	2	3	4	5	6	7	8	9	10	Number of Claims Closed with Loss Payment	Number of Claims Closed Without Loss Payment
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018		
1. Prior	0	816	1,217	1,512	1,662	1,743	1,785	1,837	1,851	1,865	0	0
2. 2009	249	591	874	1,121	1,256	1,344	1,372	1,391	1,397	1,399	139	78
3. 2010	XXX	265	573	919	1,133	1,295	1,351	1,380	1,409	1,413	124	70
4. 2011	XXX	XXX	232	549	826	1,012	1,145	1,193	1,223	1,234	112	64
5. 2012	XXX	XXX	XXX	212	490	744	924	1,041	1,092	1,119	94	60
6. 2013	XXX	XXX	XXX	XXX	212	494	716	887	1,000	1,039	84	57
7. 2014	XXX	XXX	XXX	XXX	XXX	241	549	804	1,003	1,125	87	60
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	238	506	789	997	85	59
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	234	529	805	70	50
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	270	610	66	51
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	306	49	42

SCHEDULE P -PART 4A - HOMEOWNERS

Years in Which Losses Were Incurred	Bulk and IBNR Reserves on Net Losses and Defense Cost Containment Expenses Reported at Year End ('000 omitted)									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	167	72	34	26	13	4	1	1	0	0
2. 2009	371	61	14	8	4	1	0	0	1	0
3. 2010	XXX	409	34	30	5	2	1	1	1	0
4. 2011	XXX	XXX	351	49	18	7	8	0	0	0
5. 2012	XXX	XXX	XXX	680	245	264	165	59	34	45
6. 2013	XXX	XXX	XXX	XXX	229	25	(2)	1	0	(1)
7. 2014	XXX	XXX	XXX	XXX	XXX	257	58	(2)	(1)	0
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	445	96	36	15
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	323	50	17
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	518	77
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	591

SCHEDULE P -PART 4C -COMMERCIAL AUTO/TRUCK LIABILITY/MEDICAL

Losses Were	Bulk and IBNR Reserves on Net Losses and Defense Cost Containment Expenses Reported at Year End ('000 omitted)									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	452	453	283	265	199	106	117	88	71	60
2. 2009	807	380	259	166	120	70	62	54	21	20
3. 2010	XXX	869	465	268	174	110	70	52	26	25
4. 2011	XXX	XXX	906	430	227	126	75	80	44	30
5. 2012	XXX	XXX	XXX	725	411	221	89	73	43	44
6. 2013	XXX	XXX	XXX	XXX	671	360	191	105	67	56
7. 2014	XXX	XXX	XXX	XXX	XXX	705	378	134	104	50
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	654	229	134	60
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	663	265	164
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	519	290
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	617

SCHEDULE P -PART 5A HOMEOWNERS/FARMOWNERS

SECTION 1

Years in Which Premiums were Earned and Losses were Incurred	Cummulative Number of Claims Closed with Loss Payment Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	51	7	3	1	1	0	0	0	0	0
2. 2009	166	199	202	202	203	203	203	203	203	203
3. 2010	XXX	186	214	216	217	218	218	218	218	218
4. 2011	XXX	XXX	149	180	182	183	184	184	184	184
5. 2012	XXX	XXX	XXX	155	185	187	188	189	189	190
6. 2013	XXX	XXX	XXX	XXX	166	191	194	195	195	196
7. 2014	XXX	XXX	XXX	XXX	XXX	147	173	176	177	177
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	225	270	274	275
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	219	266	269
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	254	296
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	382

SECTION 2

Years in Which Premiums were Earned and Losses were Incurred	Number of Claims Outstanding Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	11	5	3	2	1	1	1	1	1	1
2. 2009	20	5	3	3	2	1	1	1	1	1
3. 2010	XXX	19	4	2	1	1	1	1	1	1
4. 2011	XXX	XXX	22	5	2	1	1	1	1	1
5. 2012	XXX	XXX	XXX	25	4	3	1	1	1	1
6. 2013	XXX	XXX	XXX	XXX	14	3	1	1	1	1
7. 2014	XXX	XXX	XXX	XXX	XXX	15	3	2	1	1
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	19	4	2	1
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	19	3	1
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	19	3
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	21

SECTION 3

Years in Which Premiums were Earned and Losses were Incurred	Cummulative Number of Claims Reported Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	31	2	1	0	0	0	0	0	0	0
2. 2009	215	241	241	241	241	241	242	242	242	242
3. 2010	XXX	235	252	253	253	253	253	253	253	253
4. 2011	XXX	XXX	199	219	219	219	219	219	219	219
5. 2012	XXX	XXX	XXX	203	216	217	217	217	217	217
6. 2013	XXX	XXX	XXX	XXX	197	214	215	215	216	216
7. 2014	XXX	XXX	XXX	XXX	XXX	175	193	194	194	194
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	263	297	299	300
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	260	295	296
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	295	325
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	427

SCHEDULE P -PART 5C-COMMERCIAL AUTO/TRUCK LIABILITY/MEDICAL

SECTION 1

Years in Which Premiums were Earned and Losses were Incurred	Cummulative Number of Claims Closed with Loss Payment Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	53	23	18	7	3	(1)	2	1	1	1
2. 2009	84	118	133	138	139	139	139	140	140	140
3. 2010	XXX	77	112	119	122	123	124	124	125	125
4. 2011	XXX	XXX	75	102	107	110	112	112	113	113
5. 2012	XXX	XXX	XXX	62	84	89	92	93	94	94
6. 2013	XXX	XXX	XXX	XXX	51	74	8	82	83	84
7. 2014	XXX	XXX	XXX	XXX	XXX	52	79	84	86	88
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	58	79	83	86
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	45	66	71
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	47	67
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	49

SECTION 2

Years in Which Premiums were Earned and Losses were Incurred	Number of Claims Outstanding Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	38	20	13	7	6	4	3	3	2	1
2. 2009	34	15	9	4	3	1	1	1	1	1
3. 2010	XXX	31	15	6	5	2	1	1	1	1
4. 2011	XXX	XXX	6,354	10	8	4	2	1	1	1
5. 2012	XXX	XXX	XXX	26	14	7	4	2	1	1
6. 2013	XXX	XXX	XXX	XXX	38	13	7	4	2	1
7. 2014	XXX	XXX	XXX	XXX	XXX	38	13	7	4	2
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	37	13	7	4
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	38	13	7
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	40	13
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	42

SECTION 3

Years in Which Premiums were Earned and Losses were Incurred	Cummulative Number of Claims Reported Direct and Assumed at Year End									
	1	2	3	4	5	6	7	8	9	10
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
1. Prior	40	16	18	6	3	(2)	2	1	1	0
2. 2009	168	202	217	218	220	218	218	219	219	219
3. 2010	XXX	153	193	193	196	196	196	195	195	195
4. 2011	XXX	XXX	6,354	171	177	177	178	177	177	177
5. 2012	XXX	XXX	XXX	128	154	155	156	155	155	155
6. 2013	XXX	XXX	XXX	XXX	124	141	143	143	143	143
7. 2014	XXX	XXX	XXX	XXX	XXX	13	149	150	150	139
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	141	149	149	149
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	121	127	128
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	126	132
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	134

SCHEDULE P -PART 6C-COMMERCIAL AUTO/TRUCK LIABILITY/MEDICAL

SECTION 1

Years in Which Premiums Were Earned and Losses Were Incurred	Cummulative Premiums Earned Direct and Assumed at Year End ($000 omitted)										11
	1	2	3	4	5	6	7	8	9	10	Current Year Premiums Earned
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
1. Prior	256	16	38	6	(12)	16	(1)	0	3	3	3
2. 2009	2,651	2,903	2,914	2,915	2,906	2,906	2,905	2,905	2,905	2,905	0
3. 2010	XXX	2,859	3,146	3,197	3,185	3,183	3,180	3,180	3,186	3,185	(1)
4. 2011	XXX	XXX	2,544	2,897	2,930	2,922	2,917	2,916	2,919	2,919	(0)
5. 2012	XXX	XXX	XXX	2,491	2,663	2,676	2,665	2,666	2,665	2,664	(0)
6. 2013	XXX	XXX	XXX	XXX	2,421	2,484	2,480	2,481	2,477	2,476	(1)
7. 2014	XXX	XXX	XXX	XXX	XXX	2,392	2,408	2,415	2,403	2,404	1
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	2,397	2,419	2,422	2,421	(1)
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,344	2,346	2,340	(5)
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,302	2,328	26
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,283	2,283
12. Total	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	2,305
13. Earned Premium P -Pt1	2,906	3,128	2,879	2,904	2,592	2,476	2,387	2,374	2,302	2,305	XXX

SECTION 2

Years in Which Premiums Were Earned and Losses Were Incurred	Cummulative Premiums Earned Ceded at Year End ($000 omitted)										11
	1	2	3	4	5	6	7	8	9	10	Current Year Premiums Earned
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
1. Prior	173	21	(7)	(4)	0	(0)	1	(0)	0	0	0
2. 2009	373	498	507	510	508	508	508	508	508	508	0
3. 2010	XXX	361	502	530	526	525	526	526	527	527	0
4. 2011	XXX	XXX	345	479	513	511	513	513	513	513	0
5. 2012	XXX	XXX	XXX	228	248	246	248	248	248	248	0
6. 2013	XXX	XXX	XXX	XXX	223	238	242	244	247	248	0
7. 2014	XXX	XXX	XXX	XXX	XXX	140	134	142	150	150	0
8. 2015	XXX	XXX	XXX	XXX	XXX	XXX	170	117	117	118	0
9. 2016	XXX	XXX	XXX	XXX	XXX	XXX	XXX	184	199	200	1
10. 2017	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	87	97	10
11. 2018	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	71	71
12. Total	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	83
13. Earned Premium P -Pt1	545	507	490	388	271	150	173	142	113	83	XXX

EXCERPTS FROM THE 2018 INSURANCE EXPENSE EXHIBIT FOR FICTITIOUS INSURANCE COMPANY

INSURANCE EXPENSE EXHIBIT

FOR THE YEAR ENDED DECEMBER, 31, 2018
(To Be Filed by April 1)

OF THE Fictitious Insurance Company
ADDRESS
NAIC Group Code _____ NAIC Company Code _____ Federal Employer's Identification Number (FEIN) _____
Contact Person _____ Title _____ Telephone _____

INSURANCE EXPENSE EXHIBIT FOR THE YEAR December 31, 2018 OF THE FICTITIOUS INSURANCE COMPANY

PART I - ALLOCATION TO EXPENSE GROUPS

(000 Omitted)

Operating Expense Classifications	1	Other Underwriting Expenses			5	6
	Loss Adjustment Expense	2 Acquisition, Field Supervision and Collection Expenses	3 General Expenses	4 Taxes, Licenses and Fees	Investment Expenses	Total Expenses
1. Claim adjustment services:						
1.1 Direct	1,881	0	0	0	0	1,881
1.2 Reinsurance assumed	0	0	0	0	0	0
1.3 Reinsurance ceded	210	0	0	0	0	210
1.4 Net claim adjustment services (1.1+1.2-1.3)	1,671	0	0	0	0	1,671
2. Commission and brokerage:						
2.1 Direct excluding contingent	0	4,759	0	0	0	4,759
2.2 Reinsurance assumed excluding contingent	0	0	0	0	0	0
2.3 Reinsurance ceded excluding contingent	0	816	0	0	0	816
2.4 Contingent - direct	0	121	0	0	0	121
2.5 Contingent - reinsurance assumed	0	0	0	0	0	0
2.6 Contingent - reinsurance ceded	0	9	0	0	0	9
2.7 Policy and membership fees	0	0	0	0	0	0
2.8 Net commission and brokerage (Lines 2.1+2.2-2.3+2.4+2.5-2.6+2.7)	0	4,055	0	0	0	4,055
3. Allowances to managers and agents	0	1	3	0	0	4
4. Advertising	0	75	133	0	0	208
5. Boards, bureaus and associations	7	38	68	0	0	113
6. Surveys and underwriting reports	0	36	63	0	0	99
7. Audit of assureds' records	0	0	0	0	0	0
8. Salary and related items:						
8.1 Salaries	949	664	1,181	0	32	2,826
8.2 Payroll taxes	69	41	74	0	0	184
9. Employee relations and welfare	182	105	188	0	3	478
10. Insurance	117	8	15	0	0	140
11. Directors' fees	0	0	0	0	0	0
12. Travel and travel items	64	34	61	0	0	159
13. Rent and rent items	62	48	85	0	1	196
14. Equipment	11	15	27	0	3	56
15. Cost or depreciation of EDP equipment and software	30	119	211	0	0	360
16. Printing and stationery	5	7	12	0	0	24
17. Postage, telephone and telegraph, exchange and express	19	40	72	0	0	131
18. Legal and auditing	44	5	9	0	2	60
19. Totals (Lines 3 to 18)	1,559	1,236	2,202	0	41	5,038
20. Taxes, licenses and fees:						
20.1 State and local insurance taxes deducting guaranty association credit of $ 1,103	0	0	0	791	0	791
20.2 Insurance department licenses and fees	0	0	0	53	0	53
20.3 Gross guaranty association assessments	0	0	0	(2)	0	(2)
20.4 All other (excluding federal and foreign income and real estate)	0	0	0	0 18	0	0 18
20.5 Total taxes, licenses and fees (Lines 20.1+20.2+20.3+20.4)	0	0	0	860	0	860
21. Real estate expenses	0	0	0	0	332	332
22. Real estate taxes	0	0	0	0	14	14
23. Reimbursements by uninsured plans	XXX	XXX	XXX	XXX	XXX	XXX
24. Aggregate write-ins for miscellaneous operating expenses	25	47	83	0	6	161
25. TOTAL EXPENSES INCURRED	3,255	5,338	2,285	860	393	12,131

INSURANCE EXPENSE EXHIBIT FOR THE YEAR 2018 OF THE FICTITIOUS INSURANCE COMPANY

PART II - ALLOCATION TO LINES OF BUSINESS NET OF REINSURANCE

PREMIUMS, LOSSES, EXPENSES, RESERVES AND PROFITS AND PERCENTAGES TO PREMIUMS EARNED FOR BUSINESS NET OF REINSURANCE (000 Omitted)

		Premiums Written (Pg. 8, Pt. 1B, Col. 6)		Premiums Earned (Pg. 6, Pt. 1, Col. 4)		Dividends to Policyholders (Pg. 4, Line 17)		Incurred Loss (Pg. 9, Pt. 2, Col. 7)		Loss Adjustment Expense				Unpaid Losses (Pg. 10, Pt. 2A, Col. 8)		Loss Adjustment Expense				Unearned Premium Reserves (Pg. 7, Pt. 1A, Col. 5)		Agents' Balances	
										Defense and Cost Containment Expenses Incurred		Adjusting and Other Expenses Incurred				Defense and Cost Containment Expenses Unpaid		Adjusting and Other Expenses Unpaid					
		1 Amount	2 %	3 Amount	4 %	5 Amount	6 %	7 Amount	8 %	9 Amount	10 %	11 Amount	12 %	13 Amount	14 %	15 Amount	16 %	17 Amount	18 %	19 Amount	20 %	21 Amount	22 %
1.	Fire	2,484	XXX	2,509	100.0	1	0.0	1,554	61.9	51	2.0	129	5.1	1,402	55.9	92	3.7	130	5.2	1,133	45.1	385	15.3
2.1	Allied Lines	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.2	Multiple Peril Crop	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.3	Federal Flood	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.	Farmowners Multiple Peril	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.	Homeowners Multiple Peril	4,555	XXX	4,445	100.0	0	0.0	3,789	85.2	74	1.7	360	8.1	1,311	29.5	55	1.2	89	2.0	2,401	54.0	1,901	42.8
5.1	Commercial Multiple Peril (Non-Liability Portion)	3,032	XXX	3,034	100.0	(0)	(0.0)	1,155	38.1	82	2.7	119	3.9	672	22.1	83	2.7	106	3.5	1,377	45.1	606	19.9
5.2	Commercial Multiple Peril (Liability Portion)	1,645	XXX	1,659	100.0	0	0.0	969	58.4	314	18.9	41	2.5	2,639	159.1	1,024	61.7	258	15.6	746	45.0	447	26.9
6.	Mortgage Guaranty	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.	Ocean Marine	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.	Inland Marine	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10.	Financial Guaranty	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11.	Medical Professional Liability	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12.	Earthquake	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13.	Group A&H (See Interrogatory 1)	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14.	Credit A & H	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15.	Other A&H (See Interrogatory 1)	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16.	Workers' Compensation	4,022	XXX	3,943	100.0	42	1.1	318	8.1	426	10.8	(31)	(0.8)	13,833	350.8	1,639	41.6	474	12.0	1,520	38.5	1,282	32.5
17.1	Other Liability - Occurrence	3,502	XXX	3,548	100.0	1	0.0	4,110	115.8	483	13.6	299	8.4	16,050	452.4	3,466	97.3	1,175	33.1	1,648	46.4	785	22.1
17.2	Other Liability - Claims-made	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17.3	Excess Workers' Compensation	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18.	Products Liability	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19.1,19.2	Private Passenger Auto Liability	2,804	XXX	2,732	100.0	0	0.0	1,791	65.6	81	3.0	244	8.9	2,083	76.2	238	8.7	161	5.9	954	34.9	475	17.4
19.3,19.4	Commercial Auto Liability	2,250	XXX	2,223	100.0	1	0.0	1,432	64.4	130	5.9	144	6.5	2,974	133.8	321	14.4	155	7.0	1,014	45.6	758	34.1
21.1	Private Passenger Auto Physical Damage	1,665	XXX	1,632	100.0	0	0.0	1,072	65.7	2	0.1	222	13.7	37	2.3	2	0.1	20	1.2	554	34.3	283	17.5
21.2	Commercial Auto Physical Damage	647	XXX	646	100.0	0	0.1	456	70.6	15	2.3	54	8.4	177	27.4	51	7.9	23	3.6	291	45.0	213	33.0
22.	Aircraft (all perils)	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23.	Fidelity	146	XXX	141	100.0	0	0.3	261	185.1	13	9.2	4	2.8	716	336.9	97	68.8	4	2.8	53	37.6	37	26.2
24.	Surety	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
26.	Burglary and Theft	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
27.	Boiler and Machinery	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
28.	Credit	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
29.	International	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
30.	Warranty	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
31, 32, 33	Reinsurance-Nonproportional Assumed	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
34.	Aggregate write-ins for Other Lines of Business	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
35.	TOTALS (Lines 1 through 34)	26,752	XXX	26,512	100.0	46	0.2	16,907	63.8	1,671	6.3	1,585	6.0	41,894	158.0	7,068	26.6	2,595	9.8	11,691	44.1	7,172	27.1

PART II - ALLOCATION TO LINES OF BUSINESS NET OF REINSURANCE (Continued)

PREMIUMS, LOSSES, EXPENSES, RESERVES AND PROFITS AND PERCENTAGES TO PREMIUMS EARNED FOR BUSINESS NET OF REINSURANCE (000 Omitted)

		Commission and Brokerage Expenses Incurred (IEE Pt. 1, Line 2.8, Col. 2)		Taxes, Licenses & Fees Incurred (IEE Pt. 1, Line 20.5, Col. 4)		Other Acquisitions, Field Supervision, and Collection Expenses Incurred (IEE Pt. 1, Line 25 minus 2.8 Col. 2)		General Expenses Incurred (IEE Pt. 1, Line 25, Col. 3)		Other Income Less Other Expenses (Pg. 4, Line 15 minus Line 5)		Pre-Tax Profit or Loss Excluding All Investment Gain		Investment Gain on Funds Attributable to Insurance Transactions		Profit or Loss Excluding Investment Gain Attributable to Capital and Surplus		Investment Gain Attributable to Capital and Surplus		Total Profit or Loss	
		23 Amount	24 %	25 Amount	26 %	27 Amount	28 %	29 Amount	30 %	31 Amount	32 %	33 Amount	34 %	35 Amount	36 %	37 Amount	38 %	39 Amount	40 %	41 Amount	42 %
1.	Fire	445	17.7	81	3.2	105	4.2	190	7.6	9	0.4	(38)	(1.5)	110	4.4	72	2.9	109	4.3	181	7.2
2.1	Allied Lines	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.2	Multiple Peril Crop	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.3	Federal Flood	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.	Farmowners Multiple Peril	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.	Homeowners Multiple Peril	867	19.5	130	2.9	169	3.8	298	6.7	1	0.0	(1,241)	(27.9)	53	1.2	(1,188)	(26.7)	179	4.0	(1,009)	(22.7)
5.1	Commercial Multiple Peril (Non-Liability Portion)	527	17.3	85	2.8	193	6.3	347	11.4	2	0.1	528	17.4	78	2.6	607	20.0	121	4.0	728	24.0
5.2	Commercial Multiple Peril (Liability Portion)	283	17.1	45	2.7	62	3.7	110	6.6	0	0.0	(165)	(9.9)	196	11.8	31	1.9	119	7.2	150	9.1
6.	Mortgage Guaranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.	Ocean Marine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.	Inland Marine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10.	Financial Guaranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11.	Medical Professional Liability	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12.	Earthquake	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13.	Group A&H (See Interrogatory 1)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14.	Credit A & H	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15.	Other A&H (See Interrogatory 1)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16.	Workers' Compensation	350	8.9	242	6.1	159	4.0	282	7.2	(26)	(0.7)	2,129	54.0	835	21.2	2,964	75.2	405	10.3	3,369	85.4
17.1	Other Liability - Occurrence	482	13.6	81	2.3	224	6.3	399	11.3	31	0.9	(2,500)	(70.5)	1,030	29.0	(1,470)	(41.4)	469	13.2	(1,001)	(28.2)
17.2	Other Liability - Claims-made	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17.3	Excess Workers' Compensation	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18.	Products Liability	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19.1,19.2	Private Passenger Auto Liability	414	15.2	71	2.6	132	4.8	235	8.6	0	0.0	(236)	(8.6)	134	4.9	(102)	(3.7)	120	4.4	18	0.6
19.3,19.4	Commercial Auto Liability	328	14.8	62	2.8	115	5.2	204	9.2	2	0.1	(191)	(8.6)	169	7.6	(22)	(1.0)	130	5.8	108	4.9
21.1	Private Passenger Auto Physical Damage	245	15.2	39	2.4	82	5.1	146	9.0	0	0.0	(176)	(10.8)	8	0.5	(168)	(10.3)	46	2.8	(121)	(7.4)
21.2	Commercial Auto Physical Damage	100	15.5	19	2.9	30	4.6	53	8.2	1	0.2	(80)	(12.4)	12	1.8	(69)	(10.6)	25	3.9	(44)	(6.8)
22.	Aircraft (all perils)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23.	Fidelity	14	9.9	5	3.5	12	8.5	21	14.9	13	9.2	(176)	(125.1)	38	26.7	(139)	(98.5)	17	12.3	(121)	(86.2)
24.	Surety	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
26.	Burglary and Theft	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
27.	Boiler and Machinery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
28.	Credit	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
29.	International	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
30.	Warranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
31, 32, 33	Reinsurance-Nonproportional Assumed	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
34.	Aggregate write-ins for Other Lines of Business	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
35.	TOTALS (Lines 1 through 34)	4,055	15.3	860	3.2	1,283	4.8	2,285	8.6	33	0.1	(2,147)	(8.1)	2,663	10.0	516	1.9	1,741	6.6	2,257	8.5

PART III - ALLOCATION TO LINES OF DIRECT BUSINESS WRITTEN

PREMIUMS, LOSSES, EXPENSES, RESERVES AND PROFITS AND PERCENTAGES TO PREMIUMS EARNED FOR DIRECT BUSINESS WRITTEN (000 Omitted)

		Premiums Written (Pg. 8, Pt. 1B, Col. 1)		Premiums Earned (Sch. T, Line 59, Col. 3)		Dividends to Policyholders		Incurred Loss (Sch. T, Line 59, Col. 6)		Loss Adjustment Expense: Defense and Cost Containment Expenses Incurred		Loss Adjustment Expense: Adjusting and Other Expenses Incurred		Unpaid Losses (Sch. T, Line 59, Col. 7)		Loss Adjustment Expense: Defense and Cost Containment Expenses Unpaid		Loss Adjustment Expense: Adjusting and Other Expenses Unpaid		Unearned Premium Reserves		Agents' Balances	
		1 Amount	2 %	3 Amount	4 %	5 Amount	6 %	7 Amount	8 %	9 Amount	10 %	11 Amount	12 %	13 Amount	14 %	15 Amount	16 %	17 Amount	18 %	19 Amount	20 %	21 Amount	22 %
1.	Fire	3,254	XXX	3,275	100.0	1	0.0	1,451	44.3	52	1.6	37	1.1	1,627	49.7	103	3.1	131	4.0	1,478	45.1	385	11.8
2.1	Allied Lines	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.2	Multiple Peril Crop	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.3	Federal Flood	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.	Farmowners Multiple Peril	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.	Homeowners Multiple Peril	4,646	XXX	4,550	100.0	0	0.0	3,801	83.5	73	1.6	453	8.1	1,326	29.1	57	1.5	89	2.0	2,457	54.0	1,901	41.8
5.1	Commercial Multiple Peril (Non-Liability Portion)	3,243	XXX	3,264	100.0	(0)	(0.0)	1,511	46.3	83	2.5	35	1.1	3,509	107.5	93	2.8	107	3.3	1,474	45.1	606	18.6
5.2	Commercial Multiple Peril (Liability Portion)	1,760	XXX	1,771	100.0	0	0.0	765	43.2	319	18.0	12	0.7	312	17.6	1,147	64.8	260	14.7	796	45.0	447	25.2
6.	Mortgage Guaranty	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.	Ocean Marine	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.	Inland Marine	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10.	Financial Guaranty	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11.	Medical Professional Liability	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12.	Earthquake	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13.	Group A&H (See Interrogatory 1)	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14.	Credit A & H	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15.	Other A&H (See Interrogatory 1)	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16.	Workers' Compensation	4,394	XXX	4,421	100.0	42	1.0	2,114	47.8	432	9.8	(9)	(0.2)	15,995	361.8	1,836	41.5	477	10.8	1,704	38.5	1,282	29.0
17.1	Other Liability - Occurrence	3,749	XXX	3,773	100.0	1	0.0	764	20.3	490	13.0	87	2.3	21,058	558.1	3,866	102.5	1,180	31.3	1,753	46.5	785	20.8
17.2	Other Liability - Claims-made	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17.3	Excess Workers' Compensation	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18.	Products Liability	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19.1,19.2	Private Passenger Auto Liability	2,804	XXX	2,822	100.0	0	0.0	2,362	83.7	78	2.8	406	14.4	2,744	97.2	244	8.6	161	5.7	985	34.9	475	16.8
19.3,19.4	Commercial Auto Liability	2,334	XXX	2,305	100.0	1	0.0	4,222	183.2	130	5.6	302	13.1	3,409	147.9	349	15.1	156	6.8	1,052	45.6	758	32.9
21.1	Private Passenger Auto Physical Damage	1,661	XXX	1,636	100.0	0	0.0	1,112	66.3	11	0.1	198	13.7	36	2.2	15	0.1	25	1.2	560	34.3	283	17.3
21.2	Commercial Auto Physical Damage	651	XXX	641	100.0	0	0.0	436	70.6	4	2.3	78	8.4	212	33.1	6	7.9	10	3.6	289	45.0	213	33.2
22.	Aircraft (all perils)	0	XXX	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23.	Fidelity	138	XXX	139	100.0	0	0.3	(5)	(3.4)	13	9.5	1	0.8	1,047	753.2	109	78.2	4	2.9	52	37.6	37	26.6
24.	Surety	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
26.	Burglary and Theft	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
27.	Boiler and Machinery	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
28.	Credit	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
29.	International	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
30.	Warranty	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
34.	Aggregate write-ins for Other Lines of Business	0	XXX	0	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
35.	TOTALS (Lines 1 through 34)	28,634	XXX	28,597	100.0	46	0.0	18,533	64.8	1,685	5.9	1,600	5.6	51,275	179.3	7,825	27.4	2,599	9.1	12,601	44.1	7,172	25.1

PART III - ALLOCATION TO LINES OF DIRECT BUSINESS WRITTEN (Continued)

PREMIUMS, LOSSES, EXPENSES, RESERVES AND PROFITS AND PERCENTAGES TO PREMIUMS EARNED FOR DIRECT BUSINESS WRITTEN (000 Omitted)

		Commission and Brokerage Expenses Incurred		Taxes, Licenses & Fees Incurred		Other Acquisitions, Field Supervision, and Collection Expenses Incurred		General Expenses Incurred		Other Income Less Other Expenses		Pre-Tax Profit or Loss Excluding All Investment	
		23 Amount	24 %	25 Amount	26 %	27 Amount	28 %	29 Amount	30 %	31 Amount	32 %	33 Amount	34 %
1.	Fire	536	17.7	81	2.5	105	3.2	190	5.8	9	0.3	832	25.4
2.1	Allied Lines	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.2	Multiple Peril Crop	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
2.3	Federal Flood	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
3.	Farmowners Multiple Peril	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
4.	Homeowners Multiple Peril	1,043	19.5	130	2.9	169	3.7	298	6.5	1	0.0	(1,416)	(31.1)
5.1	Commercial Multiple Peril (Non-Liability Portion)	634	17.3	85	2.6	193	5.9	347	10.6	2	0.1	378	11.6
5.2	Commercial Multiple Peril (Liability Portion)	341	17.1	45	2.5	62	3.5	110	6.2	0	0.0	118	6.6
6.	Mortgage Guaranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
8.	Ocean Marine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
9.	Inland Marine	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10.	Financial Guaranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
11.	Medical Professional Liability	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
12.	Earthquake	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
13.	Group A&H (See Interrogatory 1)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
14.	Credit A & H	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15.	Other A&H (See Interrogatory 1)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
16.	Workers' Compensation	421	8.9	242	5.5	159	3.6	282	6.4	(26)	(0.6)	712	16.1
17.1	Other Liability - Occurrence	580	13.6	81	2.1	224	5.9	399	10.6	31	0.8	1,177	31.2
17.2	Other Liability - Claims-made	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
17.3	Excess Workers' Compensation	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18.	Products Liability	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
19.1,19.2	Private Passenger Auto Liability	498	15.2	71	2.5	132	4.7	235	8.3	0	0.0	(960)	(34.0)
19.3,19.4	Commercial Auto Liability	395	14.8	62	2.7	115	5.0	204	8.9	2	0.1	(3,124)	(135.5)
21.1	Private Passenger Auto Physical Damage	295	15.2	39	2.4	82	5.1	146	9.0	0	0.0	(247)	(15.1)
21.2	Commercial Auto Physical Damage	120	15.5	19	2.9	30	4.6	53	8.2	1	0.2	(98)	(15.3)
22.	Aircraft (all perils)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
23.	Fidelity	17	9.9	5	3.6	12	8.6	21	15.1	13	9.4	87	62.6
24.	Surety	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
26.	Burglary and Theft	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
27.	Boiler and Machinery	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
28.	Credit	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
29.	International	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
30.	Warranty	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
34.	Aggregate write-ins for Other Lines of Business	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
35.	TOTALS (Lines 1 through 34)	4,880	17.1	860	3.0	1,283	4.5	2,285	8.0	33	0.1	(2,542)	(8.9)

2018 STATEMENT OF ACTUARIAL OPINION FOR FICTITIOUS INSURANCE COMPANY

STATEMENT OF ACTUARIAL OPINION

Fictitious Insurance Company

IDENTIFICATION

I, William H. Smith, am a Fellow of the Casualty Actuarial Society, member of the American Academy of Actuaries, and am associated with the firm of WS Actuarial Consulting. I meet the qualification standards of the American Academy of Actuaries for Statements of Actuarial Opinion for the Property and Casualty ("P&C") Annual Statement.

I was appointed by the Board of Directors of Fictitious Insurance Company ("the Company") on September 7, 2018, to provide this opinion for purposes of satisfying the requirements of the NAIC Annual Statement Instructions Property/Casualty. The intended users of this opinion are Company management, its Board of Directors and state insurance department regulators.

SCOPE

I have reviewed the December 31, 2018, loss and loss adjustment expense reserves recorded under U.S. Statutory Accounting Principles, listed in Exhibit A and included in the 2018 Statutory Annual Statement of the Company as filed with the respective state insurance departments. Those loss and loss adjustment expense reserves are the responsibility of the Company's management; my responsibility is to express an opinion on those loss and loss adjustment expense reserves based on my review.

My review of the Company's reserves included the use of such actuarial assumptions and methods and such tests of the actuarial calculations as I considered necessary in the circumstances and was conducted in accordance with standards and principles established by the Actuarial Standards Board. My review considered information provided to me through January 28, 2019.

The reserves listed in Exhibit A, where applicable, include provisions for disclosure items (disclosures 8 through 13) in Exhibit B.

In my review, I have relied on data and other relevant information, prepared by John J. Hoffman, Vice President and Controller of the Company. I evaluated that data for reasonableness and consistency. I also reconciled that data to Schedule P, Part 1 of the Company's 2018 Annual Statement.

I have not reviewed the Company's unearned premium reserves, nor have I performed any analysis to determine whether a premium deficiency reserve is needed to supplement the unearned premium reserves reported by the Company.

I have not reviewed any of the Company's assets, nor have I formed any opinion as to their validity or value; the following opinion is based on the assumption that the Company's December 31, 2018, statutory-basis reserves identified herein are funded by valid assets that have suitably scheduled maturities and/or adequate liquidity to meet cash flow requirements.

OPINION

In my opinion, the amounts carried in Exhibit A on account of the items identified:

- Make a reasonable provision for all unpaid losses and loss adjustment expenses, gross and net as to reinsurance ceded, under the terms of the Company's contracts and agreements.
- Are computed in accordance with accepted standards and principles.
- Meet the requirements of the insurance laws of Florida.

RELEVANT COMMENTS

Materiality standard

In order to establish my materiality standard, for purposes of addressing the risk of material adverse deviation of the Company's reserves for unpaid losses and loss adjustment expenses, I have considered the following amounts:

1.	10% of the Company's net loss + loss adjustment expense reserves (10% of Exhibit A, Item 1. + Item 2.) at December 31, 2018	$5,155,700
2.	20% of the Company's surplus at December 31, 2018	$6,204,800
3.	The difference between the Company's surplus at December 31, 2018, and the company action level based on the NAIC's Risk-Based Capital formula	$19,848,000

My materiality standard, for purposes of preparing the analysis in support of this Statement of Actuarial Opinion, was established at $5,155,700, which is the smallest of the foregoing amounts.

Risk of material adverse deviation

I have identified the major risk factors for this company as: mass tort claims; construction defect claims; so-called "Chinese drywall" claims; cumulative injury losses; claims from large deductible workers' compensation policies; and claims related to catastrophic weather events.

In my analysis I have considered these risk factors and the implications of uncertainty in estimates of unpaid losses and loss adjustment expenses in determining my range of reasonable estimates. I also observed that the difference between the Company's carried reserves for losses and loss adjustment expenses and the higher end of my range of reasonable unpaid claim estimates is greater than my materiality standard.

In light of the materiality considerations within this analysis, and after considering the potential risks and uncertainties that could bear on the Company's reserve development, I concluded that there are significant risks and uncertainties that could result in material adverse deviation of the Company's carried reserves for unpaid losses and loss adjustment expenses as of December 31, 2018.

These risk factors are described in more detail in the following paragraphs and in the report supporting this opinion.

Mass Torts

The Company has exposure to mass tort claims such as those involving asbestos and environmental impairment liability. The Company's management has indicated that case-basis loss and allocated loss adjustment expense reserves for such claims are established as claims are reported. Additional reserves for such claims are established by the Company's management to include the potential for future development of those claims and the reporting of latent claims. Estimation of ultimate liabilities for those types of claims is unusually difficult due to such outstanding issues as whether coverage exists, definition of an occurrence, determination of ultimate damages, and allocation of such damages to financially responsible parties. The Company's net reserves for these mass tort claims totaling $3,739,000, which are included in the amounts listed in Exhibit A, are subject to greater inherent uncertainty than are estimates of the remainder of the Company's loss and loss adjustment expense liabilities.

Other losses and/or risk factors subject to greater inherent uncertainty

Additionally, at December 31, 2018, the Company has characterized construction defect claims; so-called "Chinese drywall" claims; cumulative injury losses; claims from large deductible workers' compensation policies; and claims related to catastrophic weather events, including wildfires tornadoes and hurricanes, as types of losses subject to greater inherent uncertainty than are estimates for the remainder of the Company's loss and loss adjustment expense liabilities due to pending legal interpretation, coverage disputes, length of the expected settlement pattern and high excess attachment levels. The absence of other types of losses and risk factors from this paragraph does not imply that additional factors will not be identified in the future as having contributed to significant uncertainty in the Company's estimates of unpaid losses and loss adjustment expenses.

Anticipated salvage and subrogation

The Company's management has informed me that the reserves listed in Exhibit A provide for anticipated salvage and subrogation.

Discounting

Except for tabular discount for workers' compensation and other liability, the Company's management has informed me that it does not discount its reserves for unpaid losses and loss adjustment expenses.

Pools and associations

The company does not participate in any voluntary and involuntary underwriting pools or associations.

Retroactive or financial reinsurance

I have been informed by the Company's management that it is not aware of any reinsurance contract that either has been or should have been accounted for as retroactive reinsurance or financial reinsurance.

Uncollectible reinsurance

I have been informed by the Company's management that it is not aware of any significant uncollectible reinsurance. In my review, I have requested information from management on uncollectible reinsurance, reviewed the latest available financial ratings of reinsurers by a recognized rating service and reviewed Schedule F for indications of regulatory actions or reinsurance recoverables on paid losses over 90 days past due. The majority of the Company's ceded loss reserves are with reinsurance companies rated A or better by A.M. Best Company. Past uncollectability levels and current amounts in dispute have been reviewed and found to be immaterial relative to surplus. Therefore, reinsurance collectability does not appear to be an issue. I express no opinion on the financial condition of the Company's reinsurers.

IRIS Ratios

I have reviewed the Company's calculations of the National Association of Insurance Commissioners' Insurance Regulatory Information System (IRIS) tests that relate to the Company's December 31, 2018, loss and loss adjustment expense reserves (Test 11, One-Year Reserve Development to Surplus; Test 12, Two-Year Reserve Development to Surplus; and Test 13, Estimated Current Reserve Deficiency to Surplus). No exceptional values were noted with respect to the Company's December 31, 2018, loss and loss adjustment expense reserve tests.

Extended reporting endorsements

According to management, the Company has no exposure to medical professional liability extended reporting endorsements, such as those relating to death, disability or retirement.

P&C Long Duration Contracts

Excluding financial guaranty contracts, mortgage guaranty policies and surety contracts, the Company's management has informed me that the Company does not write policies with coverage periods of 13 months or greater that are non-cancelable and not subject to premium increase.

Accident & Health ("A&H") Long Duration Contracts

The Company's management has informed me that the Company does not write A&H policies with contract terms of thirteen months and for which contract reserves are required.

* * *

An actuarial report supporting this actuarial opinion is to be provided to the Company to be retained for a period of seven years at its administrative offices and to be available for regulatory examination.

(Signature of William H. Smith)

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February 24, 2019

Exhibit A: SCOPE

Loss and Loss Adjustment Expense Reserves:		Amount
1.	Reserve for Unpaid Losses (Liabilities, Surplus and Other Funds page, Col 1, Line 1)	$41,894,000
2.	Reserve for Unpaid Loss Adjustment Expenses (Liabilities, Surplus and Other Funds page, Col 1, Line 3)	$9,663,000
3.	Reserve for Unpaid Losses – Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Cols. 13 and 15, Line 12 * 1000)	$51,275,000
4.	Reserve for Unpaid Loss Adjustment Expenses – Direct and Assumed (Should equal Schedule P, Part 1, Summary, Totals from Cols. 17, 19 and 21, Line 12 * 1000)	$10,424,000
5.	The Page 3 write-in item reserve, "Retroactive Reinsurance Reserve Assumed"	$0
6.	Other Loss Reserve items on which the Appointed Actuary is expressing an Opinion (list separately)	$0
Premium Reserves:		
7.	Reserve for Direct and Assumed Unearned Premiums for P&C Long Duration Contracts	$0
8.	Reserve for Net Unearned Premiums for P&C Long Duration Contracts	$0
9.	Other Premium Reserve items on which the Appointed Actuary is expressing an Opinion (list separately)	$0

Exhibit B: DISCLOSURES

			Last	First	Mid
1.	Name of the Appointed Actuary		Smith	William	H
2.	The Appointed Actuary's Relationship to the Company. Enter E or C based upon the following: E if an Employee of the Company or Group C if a Consultant			C	
3.	The Appointed Actuary has the following designation (indicated by the letter code): F if a Fellow of the Casualty Actuarial Society (FCAS) A if an Associate of the Casualty Actuarial Society (ACAS) M if not a member of the Casualty Actuarial Society, but a Member of the American Academy of Actuaries (MAAA) approved by the Casualty Practice Council, as documented with the attached approval letter. O for Other			F	
4.	Type of Opinion, as identified in the OPINION paragraph. Enter R, I, E, Q, or N based upon the following: R if Reasonable I if Inadequate or Deficient Provision E if Excessive or Redundant Provision Q if Qualified. Use Q when part of the OPINION is Qualified N if No Opinion			R	
5.	Materiality Standard expressed in U.S. dollars (Used to Answer Question #6)	$5,155,700			
6.	Are there significant risks that could result in Material Adverse Deviation?		Yes [X]	No [ ]	Not Applicable [ ]
7.	Statutory Surplus (Liabilities, Col 1, Line 37)	$31,024,000			
8.	Anticipated net salvage and subrogation included as a reduction to loss reserves as reported in Schedule P (should equal Part 1 Summary, Col 23, Line 12 * 1000)	$1,363,000			
9.	Discount included as a reduction to loss reserves and loss expense reserves as reported in Schedule P				
	9.1 Nontabular Discount [Notes, Line 32B23, (Amounts 1, 2, 3 & 4)], Electronic Filing Cols 1, 2, 3 & 4	$0			
	9.2 Tabular Discount [Notes, Line 32A23 (Amounts 1 & 2)], Electronic Filing Col 1 & 2.	$1,365,000			

Appendix I. Fictitious Insurance Company

10.	The net reserves for losses and expenses for the Company's share of voluntary and involuntary underwriting pools' and associations' unpaid losses and expenses that are included in reserves shown on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines.	$0
11.	The net reserves for losses and loss adjustment expenses that the Company carries for the following liabilities included on the Liabilities, Surplus and Other Funds page, Losses and Loss Adjustment Expenses lines.*	
	11.1 Asbestos, as disclosed in the Notes to Financial Statements (Notes, Line 33A03D, ending net asbestos reserves for current year), Electronic Filing Col 6	$3,280,000
	11.2 Environmental, as disclosed in the Notes to Financial Statements (Notes, Line 33D03D, ending net environmental reserves for current year), Electronic Filing Col 6	$459,000
12.	The total claims made extended loss and expense reserve (Greater than or equal to Schedule P Interrogatories).	
	12.1 Amount reported as loss reserves	$0
	12.2 Amount reported as unearned premium reserves	$0
13.	The net reserves for the A&H Long Duration Contracts that the Company carries on the following lines on the Liabilities, Surplus and Other Funds page:	
	13.1 Losses	$0
	13.2 Loss Adjustment Expenses	$0
	13.3 Unearned Premium	$0
	13.4 Write-In (list separately, adding additional lines as needed, and identify (e.g., "Premium Deficiency Reserves", "Contract Reserves other than Premium Deficiency Reserves" or "AG 51 Reserves"))	$0
14.	Other items on which the Appointed Actuary is providing Relevant Comment (list separately)	$0

* The reserves disclosed in item 11 above, should exclude amounts relating to contracts specifically written to cover asbestos and environmental exposures. Contracts specifically written to cover these exposures include Environmental Impairment Liability (post 1986), Asbestos Abatement, Pollution Legal Liability, Contractor's Pollution Liability, Consultant's Environmental Liability, and Pollution and Remediation Legal Liability.

2018 ACTUARIAL OPINION SUMMARY FOR FICTITIOUS INSURANCE COMPANY

ACTUARIAL OPINION SUMMARY

Fictitious Insurance Company

December 31, 2018

This Actuarial Opinion Summary has been prepared in conjunction with my role as Appointed Actuary for Fictitious Insurance Company ("the Company"), and in accordance with the NAIC's Annual Statement Supplemental Filing Instructions. The information provided in this Actuarial Opinion Summary will be included in the actuarial report in support of my Statement of Actuarial Opinion, dated February 24, 2019, on the Company's statutory-basis loss and loss adjustment expense reserves at December 31, 2018. That actuarial report is to be provided to the Company to be retained for a period of seven years at its administrative offices and to be available for regulatory examination.

		Net Reserves (USD in 000s)			Gross Reserves (USD in 000s)		
		Low	Point	High	Low	Point	High
A.	Actuary's range of reserve estimates	43,000		57,000	52,000		68,000
B.	Actuary's point estimate		50,000			60,000	
C.	Company carried reserves		51,557			61,699	
D.	Difference between Company carried and Actuary's estimate (C. - A. and C. – B., if applicable)	8,557	1,557	(5,443)	9,699	1,699	(6,301)

E. The Company has not had one-year adverse development in excess of 5% of surplus in at least three of the last five calendar years, as measured by Schedule P, Part 2, Summary, and disclosed in the Five-Year Historical Data, on line 74, of the Company's December 31, 2018 statutory-basis Annual Statement.

* * *

This Actuarial Opinion Summary was prepared solely for the Company for the purpose of filing with regulatory agencies and is not intended for any other purpose. Furthermore, it is my understanding that, consistent with the Annual Statement Supplemental Filing Instructions, the information provided in this

Actuarial Opinion Summary will be held confidential by those regulatory agencies and will not be made available for public inspection.

(Signature of William H. Smith)

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March 1, 2019

RESULTS OF IRIS RATIO TESTS FOR FICTITIOUS INSURANCE COMPANY

OVERVIEW

Within this section of the Appendix, we will walk through the calculation and purpose of the 13 IRIS Ratios, provide possible explanations for unusual values, and show the results of the IRIS Ratio calculations for Fictitious Insurance Company using the 2018 Annual Statement.

IRIS Ratios are grouped into four categories:

- Overall ratios
- Profitability ratios
- Liquidity ratios
- Reserve ratios

We will present the material separately by category.

It is important to note that the calculations provided herein are based on the 2017 edition of the National Association of Insurance Commissioners' (NAIC) Insurance Regulatory Information System (IRIS) Ratios Manual. Further, the ranges of "unusual values" are as provided in the 2017 IRIS manual. The NAIC re-evaluates the reasonableness of the ranges periodically, in light of the current environment. For example, years ago the range of "usual" values for IRIS Ratio 6, Investment Yield, was between 5% and 10%. Compare that to the range in 2017 of 3% to 6.5%, which reflects the current economic environment. The current version of the IRIS manual needs to be followed when analyzing data.

OVERALL RATIOS

The overall ratios focus on the insurance company's leverage, in terms of premium volume relative to surplus. There are four overall ratios:

IRIS Ratio 1: Gross premiums written to policyholders' surplus
IRIS Ratio 2: Net premiums written to policyholders' surplus
IRIS Ratio 3: Change in net premiums written
IRIS Ratio 4: Surplus aid to policyholders' surplus

IRIS Ratios 1 and 2 provide written premium-to-surplus ratios on a gross and net of reinsurance basis, respectively. The denominator is the same in each of these ratios, with the numerator differing by the amount of ceded reinsurance premium written. The source of this data can be readily found in an insurance company's Annual Statement, from either Part 1B of the Underwriting and Investment Exhibit (U&IE) and the balance sheet (page 3), or Five-Year Historical Data.

The purpose of IRIS Ratios 1 and 2 is to identify companies that may be taking on more business and more risk than they can handle relative to their surplus. Unusual values are

greater than or equal to 900% on a gross basis and 300% on a net basis. The 300% ratio on a net basis corresponds to the age-old generally accepted benchmark that insurers remain within the 3-to-1 range in terms of writings relative to surplus. This ratio is higher on a gross basis in consideration of reinsurance.

The following are examples of considerations that should be made when reviewing the results of these ratios:

- The difference between the gross and net IRIS Ratio results:
    - Wide disparity could signal heavy reliance on reinsurance or involvement in fronting arrangements. Further investigation on the quality, rating and collectability of the reinsurance should be made, as well as the level of collateral held, if any. This can be accomplished through a review of the note titled, "Reinsurance" (number 23 within the Notes to Financial Statement of the 2018 Annual Statement), Schedule F, and research on the financial ratings of the company's reinsurers listed in Schedule F by a recognized rating service, such as A.M. Best.
    - This does not mean that a narrow difference between the gross and net IRIS Ratio results should not be investigated, as it could signal inadequate levels of reinsurance protection, in particular if the company is exposed to catastrophe risk. Part 2 of the General Interrogatories provides information on a company's protection against excessive or catastrophic loss, although further inquiry would have to be made of the company for specific details.
- The amount of the gross premiums that stem from assumed business versus business directly written by the company:
    - Companies tend to have less control over business assumed from third parties. Those companies having a large portion of assumed business and IRIS Ratio 1 results nearing the unusual value benchmark should be subject to further investigation. This would include an understanding of the type of business assumed, attachment points, layers and limits of coverage, as well as the underwriting and price monitoring controls in place on the assumed book.
- The results relative to lines of business written:
    - Lower ratio results are preferred for companies writing long-tailed lines of business due to the uncertainty inherent in the ultimate payout of associated claims.

As displayed below, IRIS Ratios 1 and 2 can be calculated for Fictitious using data from the Five-Year Historical Data exhibit.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
	2018	2017	2016	2015	2014
6. Gross premiums written (GPW)	28,634,000	28,085,000	29,519,000	31,238,000	31,670,000
12. Net premiums written (NPW)	26,752,000	25,936,000	25,521,000	25,583,000	25,363,000
26. Surplus as regards policyholders (PHS)	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
Results of IRIS Ratios 1 and 2					
IRIS Ratio 1 (= Line 6 / Line 26)	92%	89%	82%	96%	92%
IRIS Ratio 2 (= Line 12 / Line 26)	86%	82%	71%	79%	73%

As displayed in the above table, the results of IRIS Ratio 1 for Fictitious, ranging from 82% to 96% over the period 2014 to 2018, were well within the benchmark imposed for unusual values (900%). Similarly, the results of IRIS Ratio 2, ranging from 71% to 86% over same period, were well within the 300% benchmark on a net basis.

IRIS Ratio 3 provides the change in net written premiums, current year over prior year, as a percentage of prior year net written premium. The source of this data can be readily found in an insurance company's Annual Statement, from either Part 1B of the current year and prior year U&IEs, or Five-Year Historical Data.

The purpose of IRIS Ratio 3 is to identify companies that are growing or declining rapidly so that further investigation can be made as to the cause. Unusual values are outside of the -33% to +33% range.

The following are examples of considerations that should be made when reviewing the results of IRIS Ratio 3:

- Consistent or large increases in results:
    - Growth brings uncertainty in the types of risks written and the frequency and ultimate cost of claims. In certain markets, it is difficult to expand without conceding on pricing and underwriting standards. Further investigation as to the source of the company's expansion and whether the company has been able to maintain adequate pricing and terms and conditions is warranted. In addition, a review of the results of other IRIS Ratios can serve to mitigate or augment the uncertainty. For example, a mitigating factor would be a low result for IRIS Ratios 1 and 2.
- Consistent or large decreases in results:
    - A decrease in writings also requires attention. A sharp reduction in writings may be a sign of financial stress.

- Unstable results year over year:
    - This may be a sign that the company does not have good controls on its underwriting or a solid business plan and therefore raises uncertainty with respect to the viability of the company in the long-term.

We can also calculate IRIS Ratio 3 from Fictitious' Five-Year Historical Data exhibit.

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
	2018	2017	2016	2015	2014
12. Net premiums written (NPW)	26,752,000	25,936,000	25,521,000	25,583,000	25,363,000
Results of IRIS Ratio 3					
IRIS Ratio 3 (= Line 12 current less prior year) /Line 12 prior year)	3%	2%	0%	1%	

As displayed in the above table, the results of IRIS Ratio 3 for Fictitious, ranging from 0% to 3% over the period 2014 through 2018, were well within the benchmark imposed for unusual values (outside the range -33% to +33%).

IRIS Ratio 4 provides the ratio of surplus aid to policyholder surplus. It is meant to identify companies that rely heavily on reinsurance as a means to enhance surplus. Insurance companies typically receive a ceding commission from their reinsurers for placing business with those reinsurers. Under statutory accounting, the treatment of ceding commissions is similar to the way that an insurance company treats policy acquisition costs, the "signs" are just different. While acquisition expenses are a direct charge to income and surplus as they are incurred, ceding commissions are recognized as a credit to income and surplus when they are incurred. Surplus aid represents the amount of enhancement to surplus in the current period as a result of ceding commission that has been taken into income on its ceded unearned premium. Formulaically,

Surplus aid =

Estimated reinsurance commission rate
* Unearned premium on reinsurance ceded to non-affiliates

where,

Estimated reinsurance commission rate =

Ceding commissions from reinsurance, including contingent commissions
÷ Total written premiums ceded to reinsurers (affiliates and non-affiliates)

Ceding commissions from reinsurance for the current year are found in Part 3, Expenses of the U&IE of the Annual Statement, column 2 (other underwriting expenses), line 2.3 (reinsurance ceded, excluding contingent) plus line 2.6 (contingent – reinsurance ceded).

Total written premiums ceded to reinsurers is found in Part 1B, Premiums Written of the U&IE of the Annual Statement, column 4 (reinsurance ceded to affiliates) plus column 5 (reinsurance ceded to non-affiliates) totals.

Unearned premium on reinsurance ceded to non-affiliates is found in Schedule F, Part 3, reinsurance ceded of the Annual Statement, column 13 totals for the following three categories of unaffiliated reinsurers:

1. Authorized, unauthorized and certified other U.S. unaffiliated insurers
2. Authorized, unauthorized and certified mandatory and voluntary pools
3. Authorized, unauthorized and certified other non-U.S. insurers

IRIS Ratio 4 is the ratio of surplus aid, as calculated above, to policyholders' surplus.

Unusual values are greater than or equal to 15%, and may be a sign that policyholders' surplus is inadequate. Therefore, when IRIS Ratio 4 produces values greater than 15%, certain other IRIS Ratio tests dependent upon policyholders' surplus are recalculated to remove surplus aid. These are:

IRIS Ratio 1: Gross premiums written to policyholders' surplus
IRIS Ratio 2: Net premiums written to policyholders' surplus
IRIS Ratio 7: Gross change in policyholders' surplus
IRIS Ratio 10: Gross agents' balances (in collection) to policyholders' surplus
IRIS Ratio 13: Estimated current reserve deficiency to policyholders' surplus

Further, when IRIS Ratio 4 produced unusual values, the company's reinsurance treaties should be evaluated to assess the impact that cancellation could have on solvency.

The following provides the calculation of IRIS Ratio 4 for Fictitious.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Annual Statement (USD)			
		2018	Source
(1)	Surplus Aid	403,172	= (2) * (9) * 1000
(2)	Estimated reinsurance commission rate	44%	= (3) / (6)
(3)	Total ceding commissions from reinsurance	825,000	= (4) + (5)
(4)	Reinsurance ceded, excluding contingent	816,000	Underwriting & Investment Exhibit, Part 3, Column 2, Line 2, 3
(5)	Ceding Commission from reinsurance	9,000	Underwriting & Investment Exhibit, Part 3, Column 2, Line 2, 6
(6)	Total written premiums ceded to reinsurers	1,882,000	= (7) + (8); = Five Year Historical Data GPW minus NPW
(7)	Reinsurance ceded to affiliates	0	Underwriting & Investment Exhibit, Part 1B, Column 4, Total
(8)	Reinsurance ceded to non-affiliates	1,882,000	Underwriting & Investment Exhibit, Part 1B, Column 5, Total
(9)	Unearned premium on reinsurance ceded to non-affiliates	920	= Sum of (10) through (21)
(10)	Authorized Other U.S. Unaffiliated Insurers	532	Schedule F, Part 3, Column 13, Total (000 omitted)
(11)	Authorized Mandatory Pools		Schedule F, Part 3, Column 13, Total (000 omitted)
(12)	Authorized Voluntary Pools	50	Schedule F, Part 3, Column 13, Total (000 omitted)
(13)	Authorized Other Non-U.S. Insurers	201	Schedule F, Part 3, Column 13, Total (000 omitted)
(14)	Unauthorized Other U.S. Unaffiliated Insurers	29	Schedule F, Part 3, Column 13, Total (000 omitted)
(15)	Unauthorized Mandatory Pools		Schedule F, Part 3, Column 13, Total (000 omitted)
(16)	Unauthorized Voluntary Pools		Schedule F, Part 3, Column 13, Total (000 omitted)
(17)	Unauthorized Other Non-U.S. Insurers	16	Schedule F, Part 3, Column 13, Total (000 omitted)
(18)	Certified Other U.S. Unaffiliated Insurers		Schedule F, Part 3, Column 13, Total (000 omitted)
(19)	Certified Mandatory Pools		Schedule F, Part 3, Column 13, Total (000 omitted)
(20)	Certified Voluntary Pools		Schedule F, Part 3, Column 13, Total (000 omitted)
(21)	Certified Other Non-U.S. Insurers	92	Schedule F, Part 3, Column 13, Total (000 omitted)
(22)	Surplus as regards policyholders (PHS)	31,024,000	Page 3, Line 37, Column 1
Results of IRIS Ratio 4			
IRIS Ratio 4		1.30%	= (1) / (22)

As displayed in the above table, the result of IRIS Ratio 4 of 1.30% for Fictitious was well within the benchmark imposed for unusual values (greater than or equal to 15%).

PROFITABILITY RATIOS

The profitability ratios focus on the insurance company's profitability from an operations, investment and surplus perspective. There are four profitability ratios:

IRIS Ratio 5: Two-year overall operating ratio
IRIS Ratio 6: Investment yield
IRIS Ratio 7: Gross change in policyholders' surplus
IRIS Ratio 8: Change in adjusted policyholders' surplus

IRIS Ratio 5 essentially provides a company's combined ratio over a two-year period, offset for investment income earned over that period. In IRIS Ratio 5, the combined ratio is calculated as loss and loss adjustment expense (LAE) incurred plus policyholder dividends incurred, divided by earned premium, plus other underwriting expenses less other income, divided by written premium. The investment income ratio is calculated as the ratio of investment income earned divided by earned premium.

$$\text{Two-year operating ratio} = \text{Two-year combined ratio} - \text{Two-year investment income ratio}$$

where,

$$\text{Combined ratio} = \frac{\text{Net loss and LAE + Dividends to policyholders incurred}}{\text{Net earned premium}} + \frac{\text{Other underwriting expenses – Other income incurred}}{\text{Net written premium}}$$

$$\text{Investment income ratio} = \frac{\text{Investment income earned}}{\text{Net earned premium}}$$

The source of this data can be readily found in an insurance company's Annual Statement, from the Statement of Income and Part 1B of the U&IE.

The purpose of IRIS Ratio 5 is to identify companies that are operating unprofitably. A two-year period is used in the calculation to smooth unusual fluctuations due to a "bad" loss or investment year. Unusual values are greater than or equal to 100%, meaning that the company is operating at an underwriting loss, even after consideration of investment income.

When reviewing the result of this ratio, consideration should be made for the cause by looking at each of the components of the calculation. During the financial crisis, companies experienced a significant decline in investment income and therefore did not achieve as much of a benefit in the offset afforded in the calculation. Further, adverse development on prior accident years will have an impact on the combined ratio, but such development may not be reflective of profitability on the company's current operations or current reserving.

IRIS Ratio 5 is calculated for Fictitious in the following table.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Annual Statement (USD)				
	2018 (Current Year)	2017 (Prior Year)	Sum over 2-Year	Source
(1) Combined Ratio	108%	94%	101%	= (2) + (8)
(2) Loss Ratio	76%	62%	69%	= (3) / (7)
(3) Loss & LAE plus Dividends to Policyholders incurred	20,208,000	15,838,000	36,046,000	= (4) + (5) + (6)
(4) Losses incurred	16,907,000	12,798,000	29,705,000	Statement of Income, Line 2, Columns 1 and 2, respectively
(5) Loss Adjustment Expenses (LAE) incurred	3,255,000	3,008,000	6,263,000	Statement of Income, Line 3, Columns 1 and 2, respectively
(6) Dividends to policyholders	46,000	32,000	78,000	Statement of Income, Line 17, Columns 1 and 2, respectively
(7) Net premiums earned	26,512,000	25,535,000	52,047,000	Statement of Income, Line 1, Columns 1 and 2, respectively
(8) Expense Ratio	32%	32%	32%	= (9) / (13)
(9) Expenses Incurred	8,450,000	8,194,000	16,664,000	= (10) + (11) - (12)
(10) Other underwriting expenses	8,483,000	8,240,000	16,723,000	Statement of Income, Line 4, Columns 1 and 2, respectively
(11) Aggregate write-ins for underwriting deductions	–	1,000	1,000	Statement of Income, Line 5, Columns 1 and 2, respectively
(12) Total other income	33,000	47,000	80,000	Statement of Income, Line 15, Columns 1 and 2, respectively
(13) Net premiums written	26,752,000	25,936,000	52,688,000	Underwriting & Investment Exhibit, Part 1B, Column 6, Total*
(14) Investment Income Ratio	16%	19%	18%	= (15) / (16)
(15) Investment income earned	4,290,000	4,860,000	9,150,000	Statement of Income, Line 9, Columns 1 and 2, respectively
(16) Net premiums earned	26,512,000	25,535,000	52,047,000	Statement of Income, Line 1, Columns 1 and 2, respectively
Results of IRIS Ratio 5				
IRIS Ratio 5			84%	= (1) - (14) for two-year period
*Also provided in Five-Year Historical Data				

As displayed above, the result of IRIS Ratio 5 for Fictitious of 84% was well within the 100% benchmark imposed for unusual values.

IRIS Ratio 6 provides the yield in the company's investment portfolio over the past year. IRIS Ratio 6 is calculated as net investment income earned during the year divided by the average of cash plus invested assets over the current and prior year. The source of this data can be readily found in an insurance company's Annual Statement, from the balance sheet and Statement of Income.

The purpose of IRIS Ratio 6 is to identify companies earning unusually low or high yields, potentially indicating a risky, inefficient or expensive investment strategy. Unusual values are

outside of a 3.0% to 6.5% range. That is, it is expected that companies will achieve a 3.0% to 6.5% yield on their invested assets during the year.

When reviewing the result of this ratio, consideration should be made for the cause by looking at each of the components of the calculation, and further investigation into the types of investment should be made.

The following provides the calculation of IRIS Ratio 6 for Fictitious.

Data from Fictitious Insurance Company 2018 Annual Statement (USD)				
	2018 (Current Year)	2017 (Prior Year	Sum over 2-Year	Source
(1) Net investment income earned	4,290,000			Statement of Income, Line 9, Column 1
(2) Cash and invested assets	88,551,000	88,534,000	88,542,500	= (3) + (4) - (5); Average over two-year
(3) Total cash and investment assets	87,825,000	87,784,000		Page 2, Line 12, Columns 3 and 4, respectively
(4) Investment income due and accrued	726,000	750,000		Page 2, Line 14, Columns 3 and 4, respectively
(5) Borrowed money	–	–		Page 3, Line 8, Columns 1 and 2, respectively
Results of IRIS Ratio 6				
IRIS Ratio 6			5.0%	= 2 * (1) current year /[(2) for two-year period – (1) current year]

As displayed in the above table, the result of IRIS Ratio 6 for Fictitious of 5.0% was right around the midpoint of the expected benchmark range of 3.0% to 6.5% for usual values. This means that the company earned a return on its invested assets within what would be considered the "norm" for companies in 2018.

IRIS Ratio 7 is what the NAIC calls "the ultimate measure of improvement or deterioration in the insurer's financial condition during the year."[236] It provides the change in policyholder surplus, current year over prior year, as a percentage of prior year surplus, with the surplus figures coming directly from the company's balance sheet. We note that historical surplus figures are also provided in the Five-Year Historical Data of the company's Annual Statement.

Unusual values are outside of a -10% to +50% range. That is, a decrease in a company's surplus by 10% or more, or an increase by 50% or more, is considered a signal for the analyst to perform further inquiry and investigation. The NAIC recognizes that a 10% decrease is

[236] NAIC, Insurance Regulatory Information System (IRIS) Ratios Manual, 2017 edition, page 18.

conservative; however, decreases in policyholder surplus are of course a greater concern than increases. Increases in surplus of 50% or more are very unusual for a stable company absent an acquisition or redistribution of capital amongst affiliates and therefore would be a sign of financial instability. According to the NAIC, "a number of insolvent insurers report dramatic increases in policyholders' surplus prior to insolvency."[237]

Using the Five-Year Historical Data exhibit, we can calculate the result of IRIS Ratio 7 over the past four years.

Data from Fictitious Insurance Company 2018 Annual Statement (USD)					
	2018	2017	2016	2015	2014
26. Surplus as regards policyholders (PHS)	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
Results of IRIS Ratio 7					
IRIS Ratio 7 (= Line 26 current less prior year / Line 26 prior year)	-1.8%	-11.7%	9.9%	-5.8%	

As displayed in the above table, the result of IRIS Ratio 7 for Fictitious did breach the -10% mark for unusual values in 2017 at -12%.

IRIS Ratio 8 is similar to IRIS Ratio 7, with the exception that current-year policyholders' surplus is adjusted to remove changes in surplus notes, capital paid-in or transferred, and surplus paid-in or transferred. Removal of these items provides a picture of the improvement or deterioration in financial results due to operations. The source of the data used in the calculation of IRIS Ratio 8 is the balance sheet and Statement of Income of the company's Annual Statement.

Unusual values are outside of a -10% to +25% range. That is, a decrease in a company's surplus resulting from operations by 10% or more, or an increase by 25% or more, is considered a signal for the analyst to perform further inquiry and investigation. The lower bound benchmark is the same as in Ratio 7; however, the upper bound of +25% is lower, reflecting the expectation that operations would not typically cause an increase in surplus by more than 25%.

The calculation of IRIS Ratio 8 is shown below for Fictitious.

[237] Ibid.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Annual Statement (USD)				
		2018 (Current Year)	2017 (Prior Year)	Source
(1)	Adjusted policyholders' surplus	(584,000)	(4,546,000)	= (2) - (3) - (4) – (8) – (12)
(2)	Policyholders' surplus	31,024,000	31,608,000	Statement of Income, Line 39, Columns 1 and 2, respectively
(3)	Change in surplus notes	–	–	Statement of Income, Line 29, Columns 1 and 2, respectively
(4)	Capital paid-in or transferred	–	–	= (5) + (6) + (7)
(5)	Paid in	–	–	Statement of Income, Line 32.1, Columns 1 and 2, respectively
(6)	Transferred from surplus (Stock Dividend)	–	–	Statement of Income, Line 32.2, Columns 1 and 2, respectively
(7)	Transferred to surplus	–	–	Statement of Income, Line 32.3, Columns 1 and 2, respectively
(8)	Surplus paid-in or transferred	–	361,000	= (9) + (10) + (11)
(9)	Paid in	–	361,000	Statement of Income, Line 33.1, Columns 1 and 2, respectively
(10)	Transferred to capital (Stock Dividend)	–	–	Statement of Income, Line 33.2, Columns 1 and 2, respectively
(11)	Transferred from capital	–	–	Statement of Income, Line 33.3, Columns 1 and 2, respectively
(12)	Policyholders' surplus prior year	31,608,000	35,793,000	Statement of Income, Line 21, Columns 1 and 2, respectively
Results of IRIS Ratio 8				
IRIS Ratio 8		-2%	-13%	= (1) / (12)

As displayed in the above table, the result of IRIS Ratio 8 for Fictitious did breach the -10% mark for unusual values in 2017 at -13%. This is consistent with the finding from IRIS Ratio 7; however, it shows that the surplus enhancement during 2017 of $361,000 helped to cushion the impact of the change in surplus observed in IRIS Ratio 7.

This ratio is telling us that the unusual value in 2017 could be attributed to the company's operations. However, going back and reviewing the components of IRIS Ratio 5, we see that the company's combined ratio for 2017 was 94%, indicating that the company was operating at a profit from its underwriting results. Further, the investment income ratio in 2017 was 19%, which was higher than in 2018. This indicates that the decrease in the company's surplus was not a result of the company's income; net income earned in 2017 was positive, at $4.955 million (see page 4, line 20, column 2). We therefore need to look to the capital and surplus account within the Statement of Income for the reason.

Within column 2 of the capital and surplus account, we see the biggest decrease in surplus came from dividends to stockholders totaling $10.023 million in 2017. This was more than

$7 million higher than dividends made in 2018 and was the reason for the decrease in surplus greater than 10%. Further investigation would determine why the company made such a large dividend payment in 2017 and whether regulatory approvals were required and obtained.

LIQUIDITY RATIOS

The liquidity ratios focus on the amount of liquid assets that the insurance company has to cover its obligations. There are two liquidity ratios:

IRIS Ratio 9: Adjusted liabilities to liquid assets
IRIS Ratio 10: Gross agents' balances (in collection) to policyholders' surplus

IRIS Ratio 9 provides an indication of the company's ability to pay its financial obligations out of assets that are readily convertible into acceptable forms of payment (i.e., cash). In this calculation, an insurance company's liabilities are adjusted to remove deferred agents' balances, as these balances are not liquid assets. Liquid assets include the following:

- Bonds, excluding affiliates
- Stocks, excluding affiliates
- Cash, cash equivalents and short-term investments, excluding affiliates
- Receivable for securities
- Investment income due and accrued

Unusual values are greater than or equal to 100%, suggesting that the company would not be able to pay its liabilities with current liquid assets as defined above.

The primary source of this information is the balance sheet, with investments in parent, subsidiaries and affiliates coming from Five-Year Historical Data, lines 42 through 45 in the 2018 Annual Statement.

The following provides the calculation of IRIS Ratio 9 for Fictitious.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Annual Statement (USD)			
	2018 (Current Year)	2017 (Prior Year)	Source
(1) Adjusted Liabilities	63,862,000	63,141,000	= (2) - (3)
(2) Total liabilities	68,976,000	68,068,000	Page 3, Line 28, Columns 1 and 2, respectively
(3) Deferred agent's balances	5,114,000	4,927,000	Page 2, Line 15.2, Columns 3 and 4, respectively
(4) Liquid assets	79,759,000	79,960,000	= (5) + (6) + (9) + (10) + (11) – (12)
(5) Bonds	58,676,000	58,861,000	Page 2, Line 1, Columns 3 and 4, respectively
(6) Stocks	19,374,000	19,116,000	= (7) + (8)
(7) Preferred stocks	34,000	35,000	Page 2, Line 2.1, Columns 3 and 4, respectively
(8) Common stocks	19,340,000	19,081,000	Page 2, Line 2.2, Columns 3 and 4, respectively
(9) Cash, cash equivalents and short-term investments	983,000	1,233,000	Page 2, Line 5, Columns 3 and 4, respectively
(10) Receivables for securities	–	–	Page 2, Line 9, Columns 3 and 4, respectively
(11) Investment income due and accrued	726,000	750,000	Page 2, Line 14, Columns 3 and 4, respectively
(12) Investments in parent, subsidiary and affiliates	–	–	= (13) + (14) + (15) + (16)
(13) Affiliated bonds	–	–	Five-Year Historical Data, Line 42, Columns 1 and 2, respectively
(14) Affiliated preferred stocks	-	-	Five-Year Historical Data, Line 43, Columns 1 and 2, respectively
(15) Affiliated common stocks	–	–	Five-Year Historical Data, Line 44, Columns 1 and 2, respectively
(16) Affiliated short-term investments	–	–	Five-Year Historical Data, Line 45, Columns 1 and 2, respectively
Results of IRIS Ratio 9			
IRIS Ratio 9	80%	79%	= (1) / (4)

As displayed above, the result of IRIS Ratio 9 for Fictitious Insurance Company was 80% in 2018, about 20 points below the 100% benchmark for unusual values. This ratio was consistent with that in 2017 of 79%.

IRIS Ratio 10 provides the ratio of agents' balances in the course of collection to policyholders' surplus. The purpose is to show how dependent a company's surplus is to assets that may not be collectible upon liquidation or are of questionable liquidity.

The source of the data is the balance sheet of the company's Annual Statement. Unusual values are greater than or equal to 40% of surplus.

Appendix I. Fictitious Insurance Company

The following provides the calculation of IRIS Ratio 10 for the current and prior year for Fictitious.

Data from Fictitious Insurance Company 2018 Annual Statement (USD)			
	2018 (Current Year)	2017 (Prior Year)	Source
(1) Uncollected premiums and agent's balances in course of collection	2,626,000	2,866,000	Page 2, Line 15.1, Columns 3 and 4, respectively
(2) Policyholders' surplus	31,024,000	31,608,000	Page 3, Line 37, Columns 1 and 2, respectively
Results of IRIS Ratio 10			
IRIS Ratio 10	8%	9%	= (1) / (2)

As displayed above, the result of IRIS Ratio 10 for Fictitious was 8% in 2018, which was well below the 40% threshold for unusual values. This was consistent with the result in 2017 of 9%.

RESERVE RATIOS

The reserve ratios focus on the development of an insurance company's net loss and LAE reserves for purposes of understanding reserve adequacy. These are probably the most important ratios to the property/casualty actuary and where the actuary places most attention, as these ratios are specifically commented on by the appointed actuary in the SAO.

There are three reserve ratios:

IRIS Ratio 11: One-year reserve development to policyholders' surplus
IRIS Ratio 12: Two-year reserve development to policyholders' surplus
IRIS Ratio 13: Estimated current reserve deficiency to policyholders' surplus

IRIS Ratio 11 is the same one-year development test as provided in the Five-Year Historical Data exhibit within the Annual Statement (line 74 in the 2018 Annual Statement). It measures development in the company's net loss and LAE reserves over the past year, whether adverse or favorable, relative to prior year surplus. Essentially, this test looks to see how much surplus would have been absorbed or enhanced in the prior year as a result of adverse or favorable development in the corresponding net loss and LAE reserves. Adverse development is shown as an increase to reserves and therefore a positive number. Results of IRIS Ratio 11 greater than or equal to 20% are considered unusual.

The following table provides the calculation of IRIS Ratio 11 for Fictitious over the period 2015 through 2018.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
	2018	2017	2016	2015	2014
73. Development in estimated losses and loss expenses incurred prior to current year (Schedule P, Part 2, Summary, Line 12, Col. 11; in 000s	(875)	(1,354)	(1,618)	(1,935)	(918)
74. Percent of development of losses and loss expenses incurred to policyholders' surplus of prior year end (line 73 divided by Page 4, Line 21, Col. 1 x 100)	(2.8)	(3.8)	(5.0)	(5.6)	(2.6)
26. Surplus as regards policyholders (PHS)	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
Results of IRIS Ratio 11					
IRIS Ratio 11 (= Line 74 above; = Line 73 / Line 26 prior * 1000)	-2.8%	-3.8%	-5.0%	-5.7%	

As displayed in the above table, Fictitious' loss and LAE net reserves developed favorably over the period 2014 through 2018. As a result, IRIS Ratio 11 has historically been negative, ranging from -3% to -6%, and therefore well below the benchmark imposed for unusual values (greater than or equal to +20%).

The trigger of an "unusual" value is a current year ratio greater than or equal to 20%. This will capture reserve deficiencies in the immediate prior year. In addition to this warning, the AOS serves to notify regulators of any trends whereby development in three of the prior five years exceeds 5%. The AOS has a lower threshold than IRIS 11, as it serves to identify those companies that consistently underestimate their loss and LAE reserves.

IRIS Ratio 12 is the same two-year development test as provided in the Five-Year Historical Data exhibit within the Annual Statement (line 76 of the 2018 Annual Statement). It measures development in the company's net loss and LAE reserves over the past two years, relative to surplus at the end of the second prior year. Similar to Ratio 11, results of test 12 greater than or equal to 20% are considered unusual.

The following table provides the calculation of IRIS Ratio 12 for Fictitious over the period 2016 through 2018.

Appendix I. Fictitious Insurance Company

Data from Fictitious Insurance Company 2018 Five-Year Historical Data (USD)					
	2018	2017	2016	2016	2014
75. Development in estimated losses and loss expenses incurred 2 years before the current year and prior year (Schedule P, Part 2, Summary, Line 12, Col. 12); in 000s	(2,602)	(2,906)	(3,680)	(2,544)	(1,059)
76. Percent of development of losses and loss expenses incurred to policyholders' surplus of second prior year end (Line 75 divided by Page 4, Line 21, Col. 2 x 100)	(7.3)	(8.9)	(10.6)	(7.3)	(3.0)
26. Surplus as regards policyholders (PHS)	31,024,000	31,608,000	35,793,000	32,572,000	34,567,000
Results of IRIS Ratio 12					
IRIS Ratio 12 (= Line 76 above; = Line 75 / Line 26 2nd prior * 1000)	-7.3%	-8.9%	-10.6%		

As displayed in the above table, Fictitious' IRIS Ratio 12 results have historically been negative, ranging from -7% to -10%, and therefore well below the benchmark imposed for unusual values (+20%).

IRIS Ratio 13 is a hindsight test. It looks at a company's net outstanding loss and LAE reserves at the immediate prior two years relative to calendar year earned premium for those years and adds to the reserves development that has emerged over that period (one-year development for the immediate prior year; two-year development for the year prior to that). The test then applies the average of the resulting two "adjusted" loss ratios to earned premium for the recent year (2018) to determine what the outstanding loss reserve should be for that year (2018). A calculated deficiency in recorded loss and LAE reserves of 25% or more is deemed to be unusual.

The purpose of this test is to identify companies that may not have gotten their reserves "right" in the past. The expectation inherent in this test is if companies have had adverse development in the past, they will probably have adverse development in the future. Regulators want to see if companies who have had such adverse development have corrected for it in their current estimates.

The following are examples of considerations that should be made when reviewing the results of IRIS Ratio 13:

- The losses and premiums are not matched in Ratio 13; the numerator is unpaid loss and LAE for all accident years, whereas the denominator is earned premium for the current accident year.

    - This mismatch obstructs the usefulness of the ratio because growth or decline in premium volume, or changes in the mix of business between short- and long-tailed lines, will distort the "outstanding" loss ratio.

- Similarly, because it is strictly a quantitative test, IRIS Ratio 13 cannot take into account qualitative factors that may mitigate adverse development in the future on current reserves, such as change in mix of business.

    - A good example is a company that had observed adverse development on its commercial automobile liability (CAL) line of business in the prior two years but significantly changed their product mix in the current year to be more heavily weighted toward short-tailed homeowners business. As a result of this change in mix, such adverse development would not be expected in the future.

IRIS Ratio 13 requires use of the prior year Annual Statement. While we have not included the 2017 Annual Statement for Fictitious, we have included the required values in the following table to calculate the result of IRIS Ratio 13 for 2018.

	2016	2017	2018		Source
One-Year Development			(875)	(1)	Schedule P, Part 2, Line 12, Column 11; Five-Year Historical Data, Line 73
Two-Year Development			(2,602)	(2)	Schedule P, Part 2, Line 12, Column 12; Five-Year Historical Data, Line 75
Earned Premium	25,618	25,535	26,512	(3)	Stmt of Income, Line 1, divided by 1,000
Loss Reserves	41,643	40,933	41,894	(4)	Page 3, Line 1, divided by 1,000
LAE Reserves	9,955	9,664	9,663	(5)	Page 3, Line 3, divided by 1,000
Policyholder Surplus	35,793	31,608	31,024	(6)	Page 3, Line 37, divided by 1,000

Result of IRIS Ratio 13	2016	2017	2018		Source
IRIS Ratio 13					
Outstanding Loss Ratios	201%	198%	194%	(7)	Sum of (4) thru (5), divided by (3)
Restated Loss and LAE Reserves	48,995	49,722		(8)	Sum of (4) thru (5), + (1) for 2017 or + (2) for 2016
Restated Outstanding Loss Ratios	191%	195%		(9)	= (8) divided by (3)
Average Outstanding Loss Ratio			193%	(10)	= average of row (9)
Implied Loss and LAE Reserves			51,165	(11)	= (10) * (3)
Actual Loss and LAE Reserves			51,557	(12)	Sum of (4) through (5)
Deficiency/(Redundancy)			(392)	(13)	= (11) – (12)
Ratio of Def/(Red to PHS)			-1%	(14)	= (13) divided by (6)

As displayed in the above table, Fictitious' IRIS Ratio 13 result was -1% for 2018, which was well below the benchmark imposed for unusual values (greater than or equal to 25%).

APPENDIX II. CANADIAN FINANCIAL STATEMENTS

2018 BALANCE SHEET FOR ALL PROPERTY/CASUALTY INSURANCE COMPANIES

Total Canadian Property and Casualty Companies

CONSOLIDATED ASSETS

As At Q4 - 2018

(in thousands of dollars)

Cash and Cash Equivalents	$	5,004,780
Investment Income Due and Accrued		512,256
Assets held for sale		51,342
Investments:		
Short Term Investments		4,409,047
Bonds and Debentures		85,354,451
Mortgage Loans		3,155,188
Preferred Shares		4,003,219
Common Shares		11,104,320
Investment Properties		1,458,416
Other Loans and Invested Assets		19,445,175
Total Investments		128,929,816
Receivables:		
Unaffiliated Agents and Brokers		2,752,562
Policyholders		3,046,376
Instalment Premiums		14,353,389
Other Insurers		1,052,307
Facility Association and the "P.R.R."		270,560
Subsidiaries, Associates & Joint Ventures		736,663
Income Taxes		
Other Receivables		411,455
Recoverable from Reinsurers:		
Unearned Premiums		5,493,730
Unpaid Claims and Adjustment Expenses		19,869,122
Other Recoverables on Unpaid Claims		634,168
Investments Accounted for Using the Equity Method:		
Interests in Subsidiaries, Associates & Joint Ventures		497,933
Pooled Funds		7,520,427
Property and Equipment		881,111
Deferred Policy Acquisition Expenses		6,601,419
Current Tax Assets		694,186
Deferred Tax Assets		1,633,334
Goodwill		1,573,985
Intangible Assets		2,483,752
Defined Benefit Pension Plan		132,270
Other Assets		606,043
Total Assets	$	205,742,987

Total Canadian Property and Casualty Companies

CONSOLIDATED LIABILITIES AND EQUITY

As At Q4 - 2018

(in thousands of dollars)

Liabilities		
Overdrafts	$	205,224
Borrowed Money and Accrued Interest		35,842
Payables:		
Agents and Brokers		984,489
Policyholders		212,480
Other Insurers		1,011,848
Subsidiaries, Associates & Joint Ventures		1,710,323
		2,007,317
Other Taxes Due and Accrued		1,169,444
Policyholder Dividends and Rating Adjustments		54,123
Encumbrances on Real Estate		15,602
Unearned Premiums		40,252,698
Unpaid Claims and Adjustment Expenses		98,321,002
Unearned Commissions		1,029,531
Ceded Deferred Premium Taxes		72,003
Ceded Deferred Insurane Operations Expenses		19,160
Premium Deficiency		16
Liabilities Held for Sale		-
Current Tax Liabilities		114,310
Deferred Tax Liabilities		367,138
Self-Insured Retention (SIR) portion of unpaid claims		530,134
Defined Benefit Pension Plan		774,569
Employment Benefits (not including amounts on line 23 above)		810,770
Subordinated Debt		335,500
Preferred Shares - Debt		50,000
Provisions and Other Liabilities		3,583,009
Total Liabilities	$	153,668,609
Shares issued and paid		
Common		14,711,535
Preferred		1,470,409
Contributed Surplus		3,674,641
Other		10,569
Retained Earnings		16,667,512
Head Office Account		15,154,063
Reserves		640,113
Accumulated Other Comprehensive Income (Loss)		(270,048)
Non-controlling Interests		15,581
Total Equity	$	52,074,375
Total Liabilities and Equity	$	205,742,984

2018 INCOME STATEMENT FOR ALL PROPERTY/CASUALTY INSURANCE COMPANIES

Total Canadian P&C
CONSOLIDATED STATEMENT OF INCOME
Year to date: End of Q4 - 2018
(in thousands of dollars)

Underwriting Operations		
Premiums Written		
Direct	$	66,983,074
Reinsurance Assumed		9,524,026
Reinsurance Ceded		15,257,518
Net Premiums Written		61,249,582
Decrease (Increase) in Unearned Premiums		(2,428,429)
Net Premiums Earned		58,821,152
Service Charges		354,500
Other		1,347
Total Underwriting Revenue		59,176,999
Gross Claims and Adjustment Expenses		53,026,937
Reinsurers' Share of Claims and Adjustment Expenses		9,943,318
Net Claims and Adjustment Expenses		43,083,619
Acquisition Expenses		
Gross Commissions		10,903,412
Ceded Commissions		3,067,941
Taxes		2,304,052
Other		2,239,354
General Expenses		4,981,920
Total Claims and Expenses		60,434,032
Premium Deficiency Adjustments		(360,758)
Underwriting Income (Loss)		(896,274)
Investment Operations		
Income		3,494,489
Gains (Losses) from FVO or FVTPL		(774,052)
Realized Gains (Losses)		332,710
Expenses		221,829
Net Investment Income		2,830,686
Other Revenue and Expenses		
Income (Loss) from Ancillary Operations net of Expenses		(44,376)
Share of Net Income (Loss) of Subsidiaries, Associates & Joint Ventures		12,745
Overlay approach adjustment for financial instruments (Reclass from P&L to OCI)		331,276
Share of Net Income (Loss) of Pooled Funds using Equity Method		113,963
Gains (Losses) from Fluctuations in Foreign Exchange Rates		385,693
Other Revenues		(49,637)
Finance Costs		26,494
Other Expenses		131,765
Net Income (Loss) before Income Taxes		2,525,856
Income Taxes		
Current		726,574
Deferred		(199,159)
Total Income Taxes		527,415
Net Income (Loss) for the Year	$	1,998,442
Attributable to:		
Non-controlling Interests		961
Equity Holders		3,311,854

Due to file restrictions, please use the following link to access the file:

Vaughn, T., "**The Economic Crisis and Lessons from (and for) U.S. Insurance Regulation**," Journal of Insurance Regulation, Fall 2009, pp. 3-16.

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Due to file restrictions, please use the following link to access the files:

Webel, B., "**Terrorism Risk Insurance: Overview and Issue Analysis for the 116th Congress**," Congressional Research Service R45707, Updated December 27, 2019, Summary page and pp. 1-10, stop at The Terrorism Insurance Market.

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