



National Association of Insurance Commissioners



# INSURANCE REGULATORY INFORMATION SYSTEM (IRIS) RATIOS MANUAL

2020 EDITION



National Association of Insurance Commissioners

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# **Insurance Regulatory Information Systems (IRIS) Manual**

IRIS Ratios Manual for  
Property/Casualty and Life/Accident & Health

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**2020 Edition**



National Association of  
Insurance Commissioners

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**PROCEDURES OF THE FINANCIAL ANALYSIS 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, 2020 annual filing must be adopted no later than the 2020 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 and 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 Web site 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, 2021**

**IRIS Proposed Revision Form**

<u>INSTRUCTIONS</u>	<u>FOR NAIC USE ONLY</u>
<ol style="list-style-type: none"><li>1. Complete this form for each IRIS proposal. Under "Identification of Item(s) to be Changed," include section &amp; page number, line or item identifier.</li><li>2. All attachments should be presented in a format wherein new language is underscored and deletions struck through.</li><li>3. Please consider whether this revision proposal is also addressed elsewhere in the IRIS.</li><li>4. CAUTION: before completing this form, please read additional instructions on reverse side of this form.</li></ol>	<u>DISPOSITION</u>  <div style="display: flex; justify-content: space-between;"><div style="width: 20px;"><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></div><div><b>ADOPTED</b> <b>REJECTED</b> <b>DEFERRED</b> <b>OTHER (SPECIFY)</b> _____</div></div>
DATE: _____ NAME: _____ TITLE: _____ STATE: _____ ADDRESS: _____ TELEPHONE: _____ CONTACT PERSON: _____	<u>NOTES</u>

**IRIS RATIO NAME TO WHICH PROPOSAL APPLIES**

**IF STATEMENT TYPE SPECIFIC, ALSO IDENTIFY THE TYPE:**

☐ Life/A&H

☐ Property & Casualty

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**IDENTIFICATION OF ITEM(S) TO BE CHANGED**

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**REASON OR JUSTIFICATION FOR CHANGE \*\***  
**(STATE, IN SPECIFIC TERMS, THE BENEFIT TO BE DERIVED FROM THIS PROPOSAL)**

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### **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, 2021**. Send proposals via email to Ralph Villegas, Life/Health Financial Analysis Manager, [rvillegas@naic.org](mailto:rvillegas@naic.org); or send to Rodney Good, Property/Casualty Financial Analysis Manager, [rgood@naic.org](mailto: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.



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## **I. THE SYSTEM**

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### **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

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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.

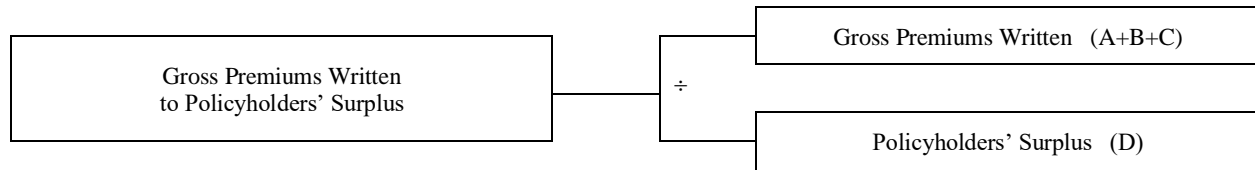
All ratios are reported as percentages, rounded to the nearest percent. For the Investment Yield ratio, results are rounded to the nearest tenth of one percent.

<b><u>Ratio Ranges</u></b>		<b>Unusual Values Equal to or</b>	
	<b>Ratio</b>	<b>Over</b>	<b>Under</b>
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 =  $100 * (A+B+C) / D$  \_\_\_\_\_ %

- 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.

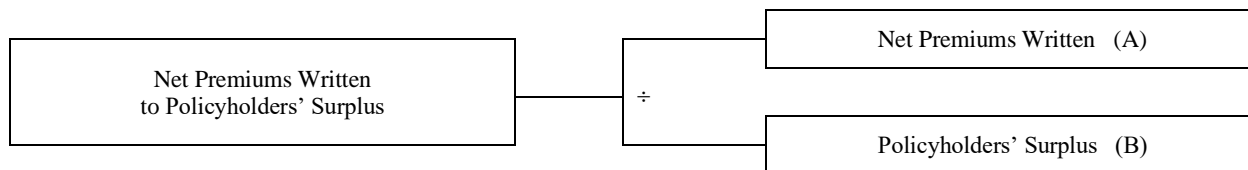
## **P/C OVERALL RATIO 1 – GROSS PREMIUMS WRITTEN TO POLICYHOLDERS' SURPLUS**

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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 = 100 \* (A / B)

%

- 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.

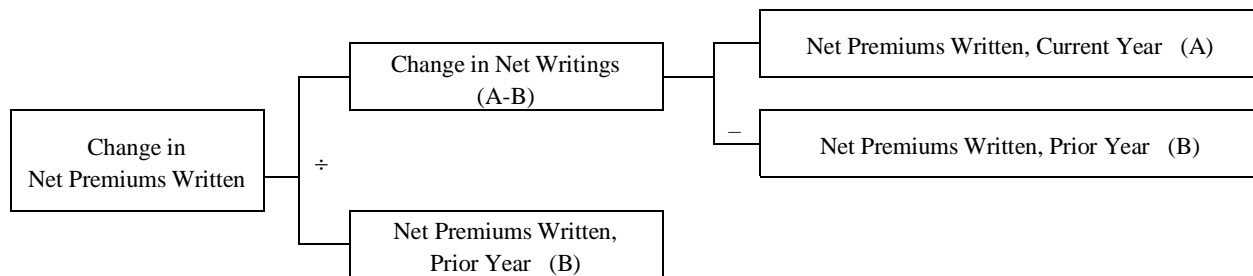
The usual range for the ratio includes results up to 300 percent.

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. 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.
3. 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.
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 =  $100 * (A-B) / B$

%

- 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**

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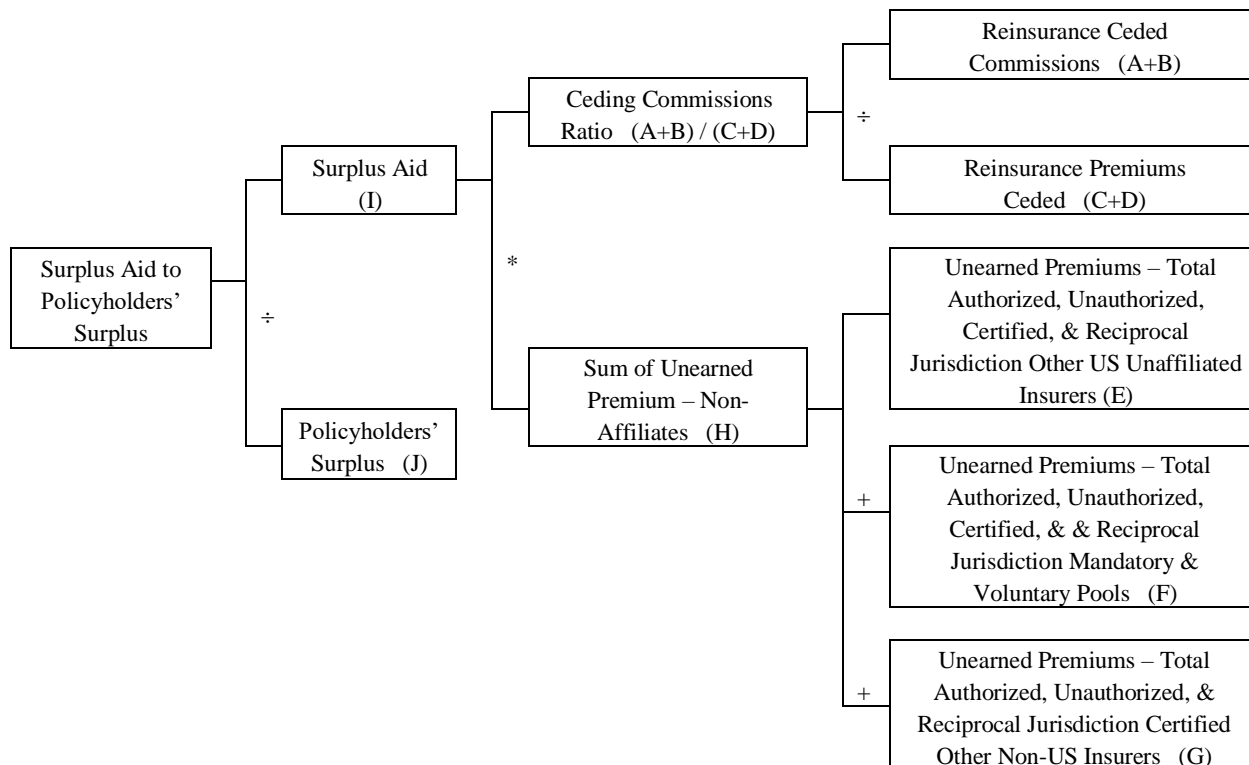
It is important to determine whether a notable increase in writings indicates that the insurer is increasing cash flow to pay current claims. This may be the case if the insurer's recent reserves were inadequate (see the one-year and two-year reserve development, Ratios 11 and 12). An increase in writings, 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): ST, PR/UW*

## 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 = 100 \* I / J

- 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**

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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:

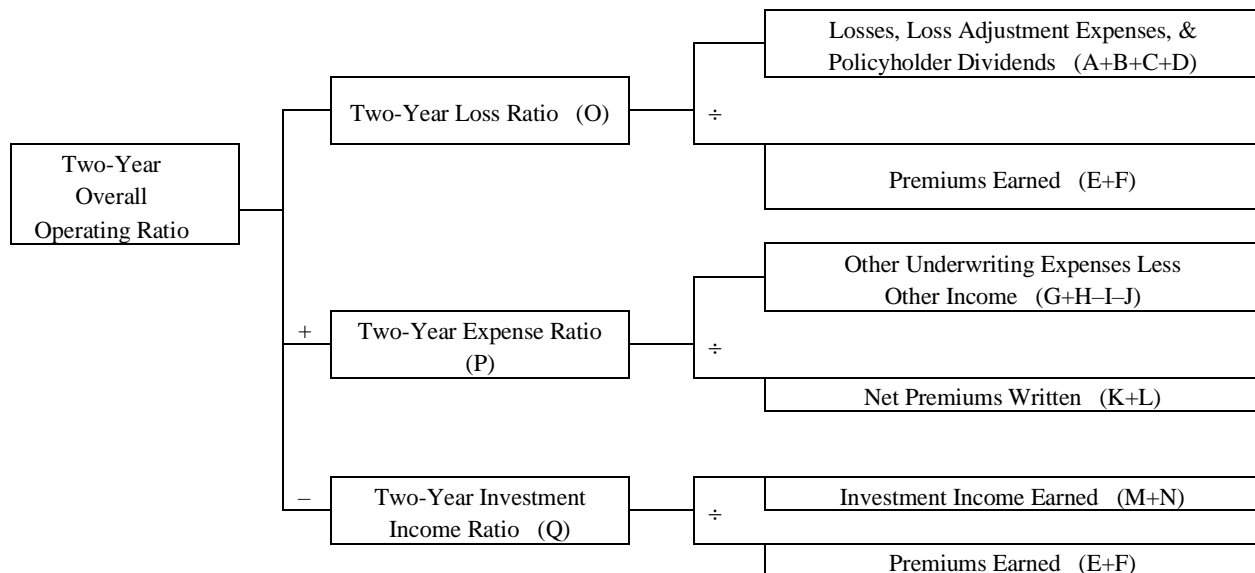
1. Gross and Net Premiums Written to Policyholders’ Surplus (Ratios 1 and 2).
2. Gross Change in Policyholders’ Surplus (Ratio 7). The previous year’s policyholders’ surplus should also be adjusted to remove surplus aid.
3. Gross Agents’ Balances (in collection) to Policyholders’ Surplus (Ratio 10).
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.

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 cancelled.

*Branded Risk(s): ST, PR/UW*

## 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**

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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	÷	<div>Net Investment Income Earned (G)</div> <div>Average Cash and Invested Assets, Current and Prior Year (A+B+C+D-E-F-G)</div>
A. Total Cash and Invested Assets, Current Year B. Total Cash and Invested Assets, Prior Year C. Investment Inc. Due & Accrd, Current Year D. Investment Inc. Due & Accrd, Prior Year E. Borrowed Money, Current Year F. Borrowed Money, Prior Year G. Net Investment Income Earned	Page 2, Line 12, Column 3 PY: Page 2, Line 12, Column 3 Page 2, Line 14, Column 3 PY: Page 2, Line 14, Column 3 Page 3, Line 8, Column 1 PY: Page 3, Line 8, Column 1 Page 4, Line 9, Column 1	       

Result = 200 \* [G / (A+B+C+D-E-F-G)]

%

- 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.

## **P/C PROFITABILITY RATIO 6 – INVESTMENT YIELD**

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### **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**

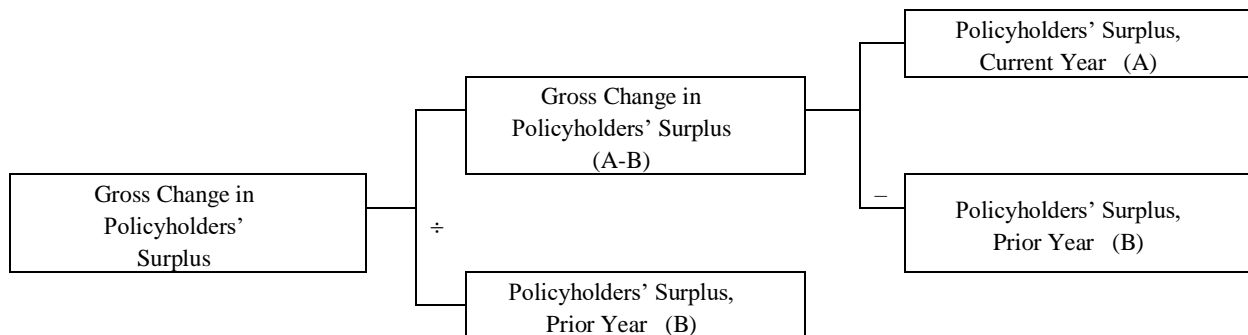
High-risk instruments could excessively leverage surplus and may fall outside statutory limitations.

### **2. Extraordinary Dividend Payments from Subsidiaries to the Parent**

Review dividend laws for the insurer's state of domicile.

*Branded Risk(s): MK, LQ, 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 = 100 \* [(A-B) / B]

%

- 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.

## **P/C PROFITABILITY RATIO 7 – GROSS CHANGE IN POLICYHOLDERS' SURPLUS**

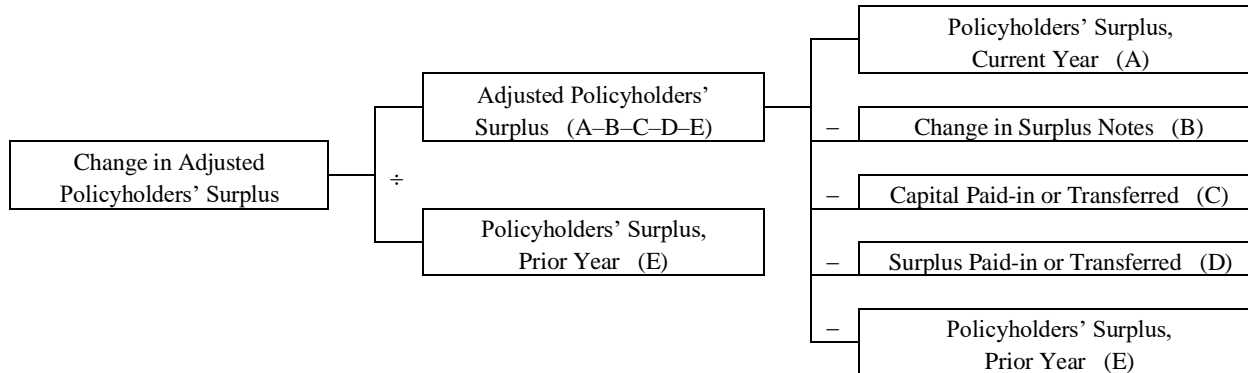
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Review the insurer's investments and the supporting annual financial statement Schedules A through E. Determine whether changes in unrealized gains or losses were in line with changes experienced by other insurers investing in similar classes of assets 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 (Ratio 4).
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): ST, OP*

## 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 = [(A-B-C-D-E) / ABS(E)] \* 100 \_\_\_\_\_ %

- 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.

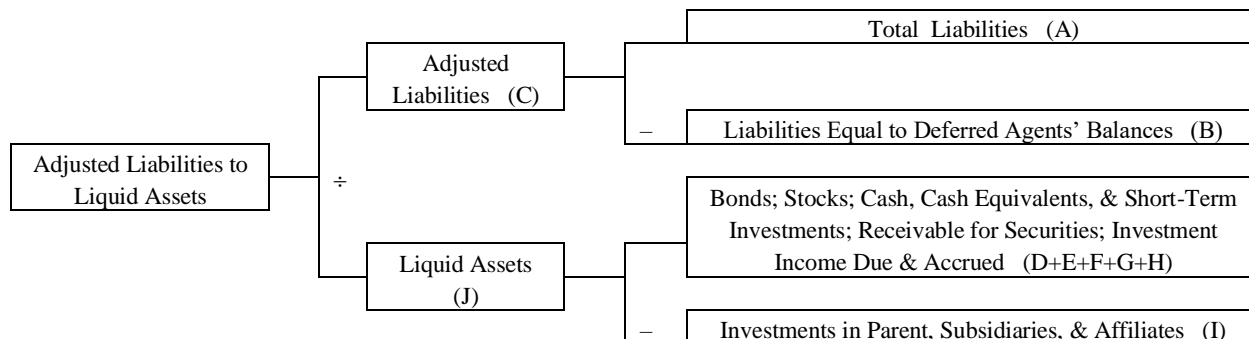
The lower range (-10 percent) is set more conservatively since a decrease in policyholders' surplus is a cause for concern. The upper range (25 percent) is used because a number of insolvent insurers have dramatic increases in policyholders' surplus prior to insolvency.

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): ST, OP*

## 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, Sub, & Affiliates	Page 17, Line 42 + 43 + 44 + 45, Column 1	_____
J. Liquid Assets = (D+E+F+G+H–I)		_____

Result = 100 \* (C / J) \_\_\_\_\_ %

• 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.

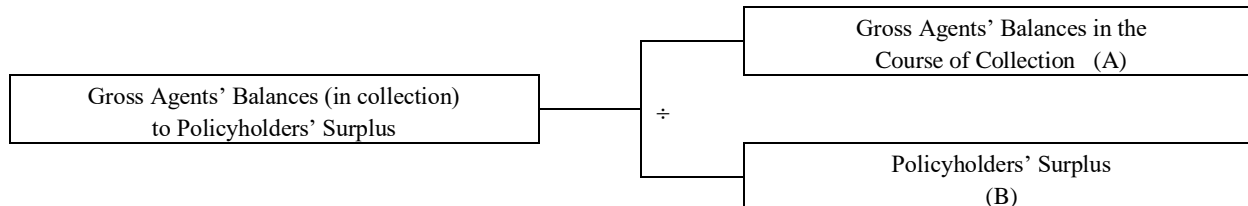
The usual range for the ratio includes results below 100 percent.

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 = 100 \* (A / B)

%

- 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.

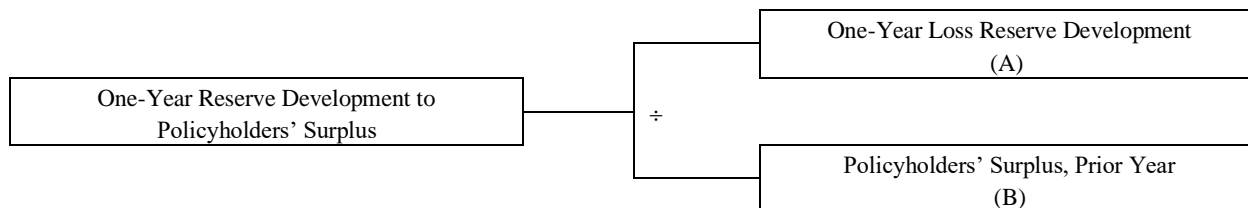
The usual range for the ratio includes results less than 40 percent.

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

B. Policyholders’ Surplus, Prior Year

Page 34, Part 2, Line 12, Column 11 \* 1000

PY: Page 3, Line 37, Column 1

Result = 100 \* (A / B)

%

- 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.

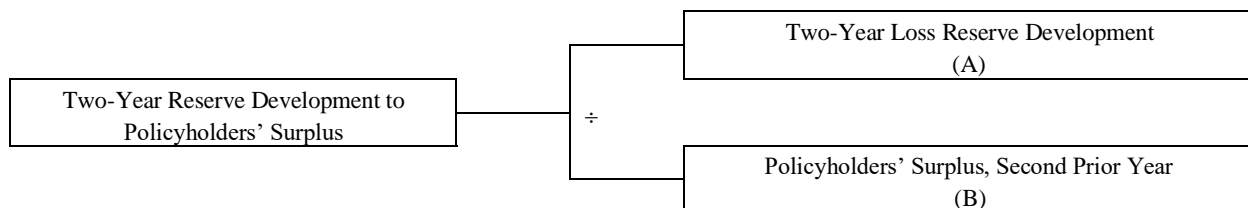
For insurers with reserves that appear to be deficient, further analysis should focus on determining which lines of business and which accident years resulted in the deficiency. The amount of deficiency for each line of business and accident year may be determined from Schedule P, Part 2.

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

2<sup>nd</sup> PY: Page 3, Line 37, Column 1

Result = 100 \* (A / B)

%

- 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 reserve 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:

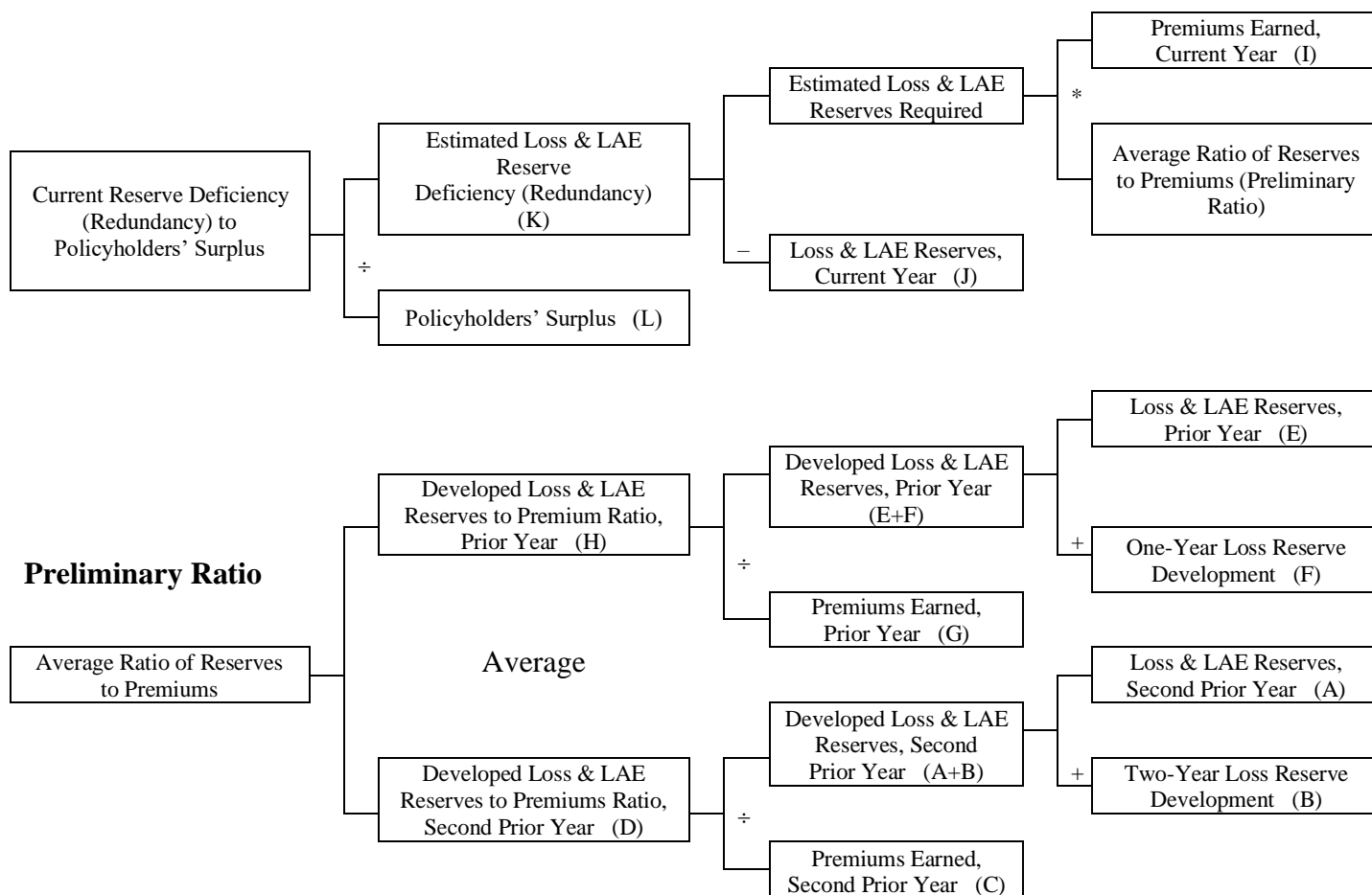
- Strengthening of deficient loss and LAE reserves held at the end of the second prior year-end
- Write-off of paid and unpaid losses for uncollectible reinsurance
- Commutation of ceded reinsurance
- Change in tabular reserve discounts

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  
B. Two-Year Loss Reserve Development  
C. Premiums Earned, Second Prior Year  
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

2<sup>nd</sup> PY: Page 3, Line 1 + 3, Column 1  
 Page 34, Part 2, Line 12, Column 12 \* 1000  
 2<sup>nd</sup> PY: Page 4, Line 1, Column 1

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ %

- E. Loss & LAE Reserves, Prior Year
- F. One-Year Loss Reserve Development
- G. Premiums Earned, Prior Year
- H. Developed Loss & LAE Reserves to Premium Ratio,  
Prior Year =  $[(E+F) / G]$
- I. Premiums Earned, Current Year
- J. Loss & LAE Reserves, Current Year
- 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

PY: Page 3, Line 1 + 3, Column 1  
 Page 34, Part 2, Line 12, Column 11 \*1000  
 PY: Page 4, Line 1, Column 1

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

%

Page 4, Line 1, Column 1  
Page 3, Line 1 + 3, Column 1

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Page 3, Line 37, Column 1

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$$\text{Result} = 100 * (\text{K} / \text{L})$$

%

- 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

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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.

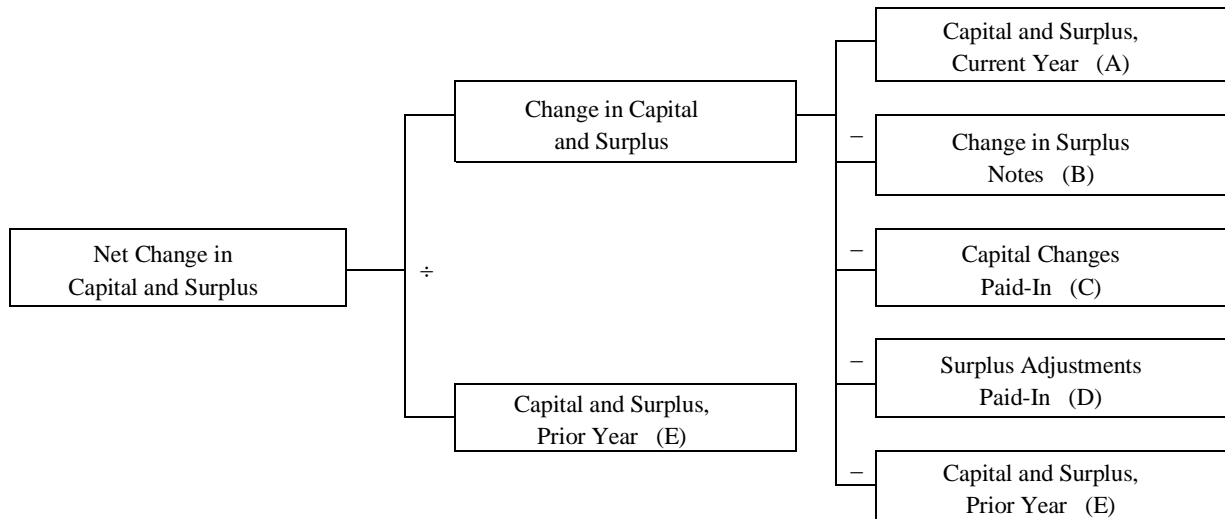
<b>IRIS Ratio</b>		<b>Unusual Values Equal to or</b>	
		<b>Over</b>	<b>Under</b>
1.	Net Change in Capital and Surplus	50	-10
2.	Gross Change in Capital and Surplus	50	-10
3.	Net Income to Total Income (Including Realized Capital Gains & Losses)	---	0
4.	Adequacy of Investment Income	900	125
5.	Nonadmitted 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.

## **LIFE/A&H OVERALL RATIO 1 – NET CHANGE IN CAPITAL AND SURPLUS**

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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.



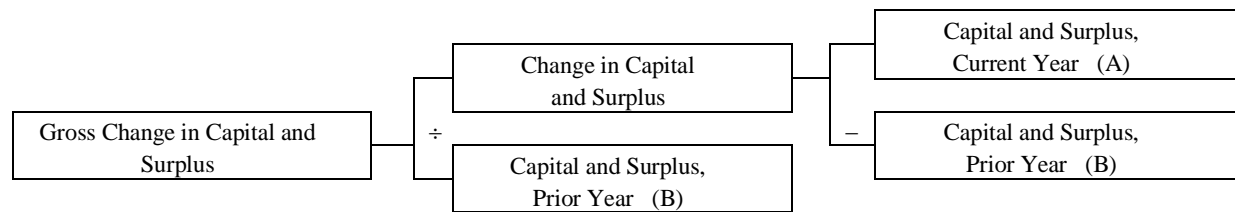
### **LIFE/A&H OVERALL RATIO 1 – NET CHANGE IN CAPITAL AND SURPLUS**

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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.

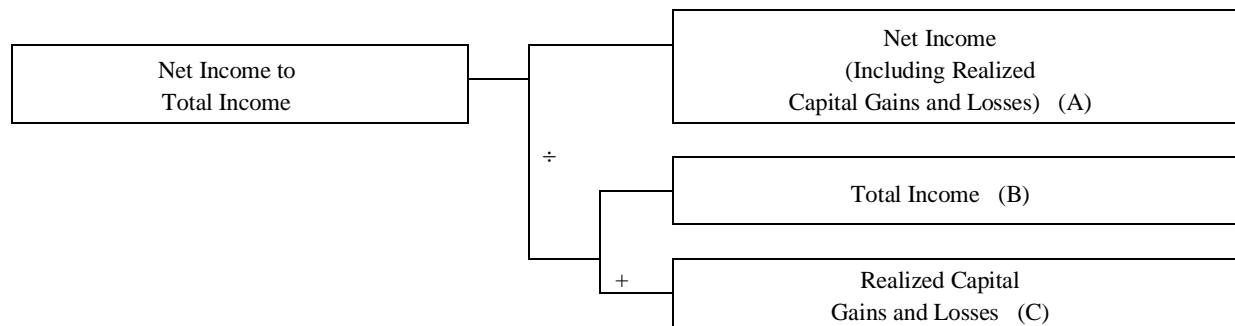
This ratio should be reviewed along with the review of Ratio 1, Net Change in Capital and Surplus. The interpretation comments that apply to Ratio 1 also apply to Ratio 2. However, if the insurer had paid-in capital and surplus during the year, the result for Ratio 2 may be significantly better than 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.

### **LIFE/A&H OVERALL RATIO 3 – NET INCOME TO TOTAL INCOME**

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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

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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

## LIFE/A&H INVESTMENT RATIOS

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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.

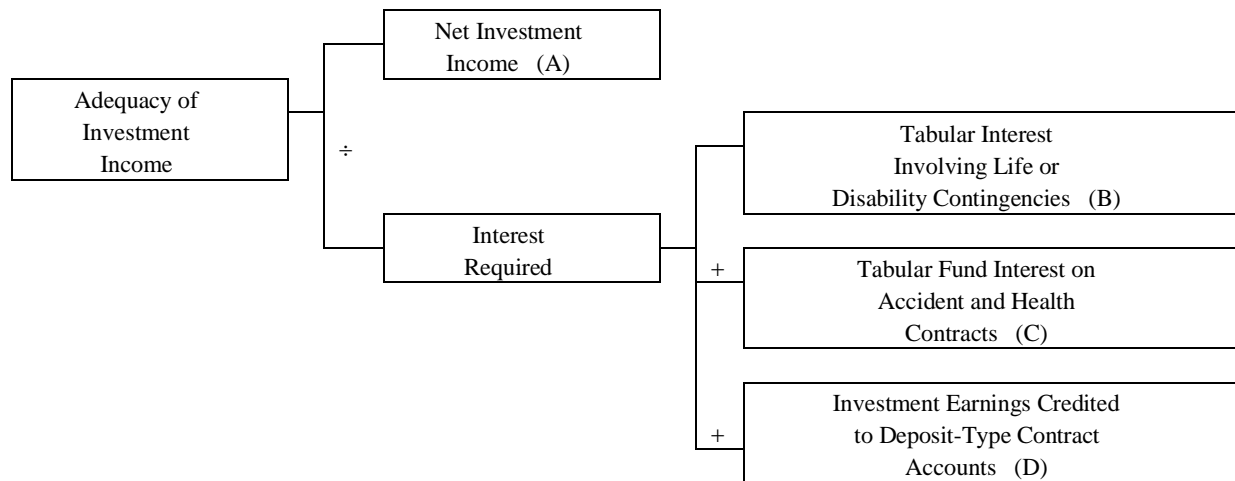
3. Liquidity – In the past, investment liquidity has been less important for life insurers than for accident and health and property/casualty insurers because of the long-term nature of the conventional life insurance contract. This has changed over the years. With many new products on the market, liquidity 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		_____ %
<ul style="list-style-type: none"> <li>• If (B+C+D) is zero, result is 999.</li> <li>• 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).</li> </ul>		

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.

## **LIFE/A&H INVESTMENT RATIO 4 – ADEQUACY OF INVESTMENT INCOME**

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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.



#### **LIFE/A&H INVESTMENT RATIO 4 – ADEQUACY OF INVESTMENT INCOME**

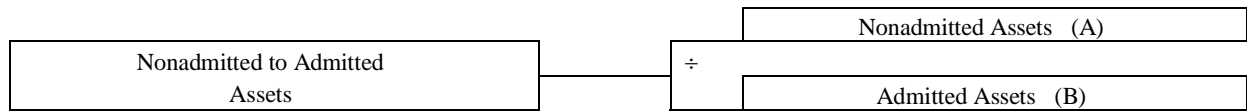
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2. Poor management of investments as they relate to the type of contracts an insurer may be writing – In the past, conventional life insurance products permitted long-term investments that matched the long-term nature of the contracts. Newer products 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



A. Nonadmitted Assets	Page 2, Line 28, Column 2	_____
B. Admitted Assets	Page 2, Line 28, Column 3	_____

Result = A / B * 100	_____ %
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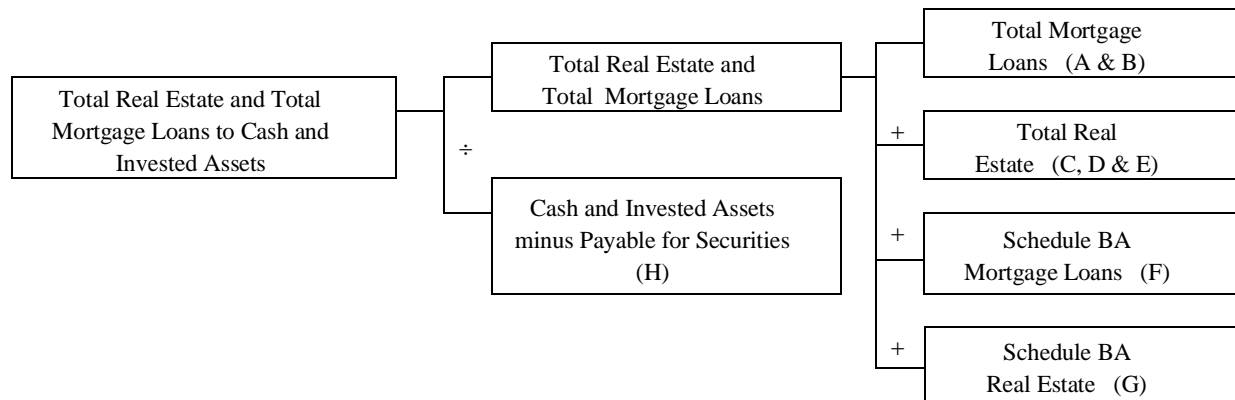
- If B is zero or negative and A is positive, result is 999.
- If A and B are both zero or negative, result is zero.

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		_____ %
<ul style="list-style-type: none"> <li>• If H is zero or negative and (A+B+C+D+E+F+G) is positive, result is 999.</li> <li>• If (A+B+C+D+E+F+G) and H are both zero or negative, result is zero.</li> </ul>		

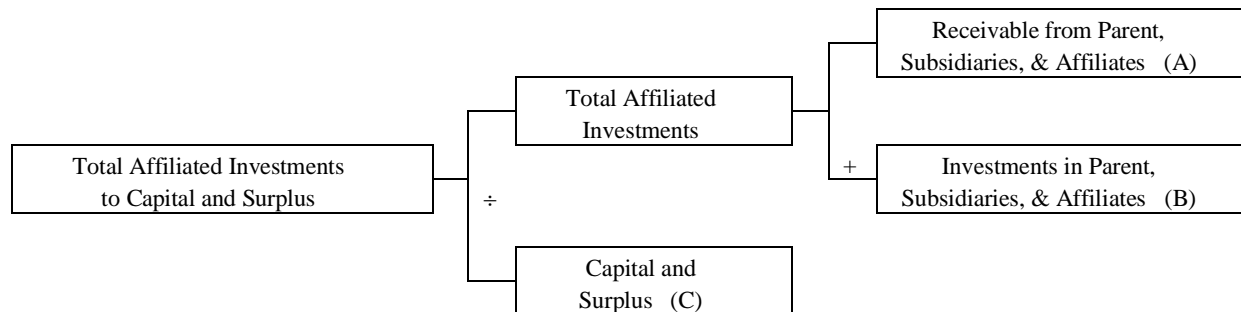
This ratio reflects the percentage of cash and invested assets that are invested in real estate and mortgage loans. Real estate and mortgage loans may be overstated. Excessive investment in real estate and mortgage loans, investment in non-income producing real estate, and overdue or restructured mortgage 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

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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

\_\_\_\_\_ %

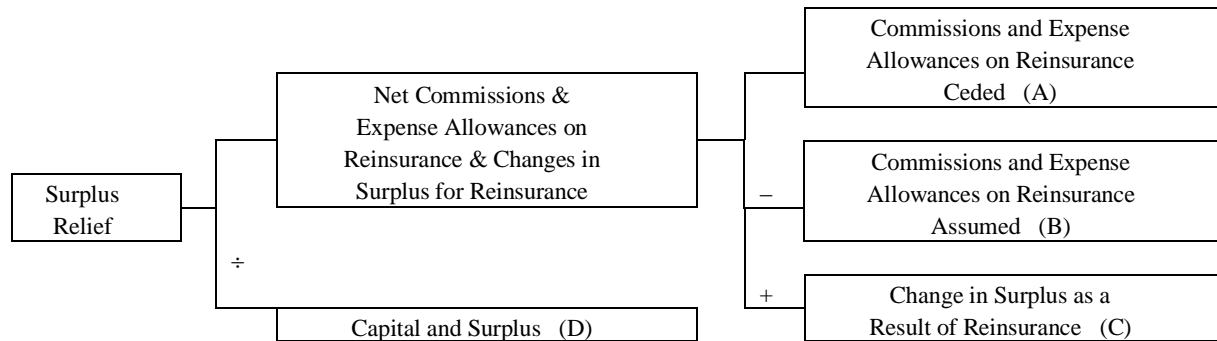
- If C is zero or negative and (A+B) is positive, result is 999.
- If (A+B) and C are zero or negative, result is zero.

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**

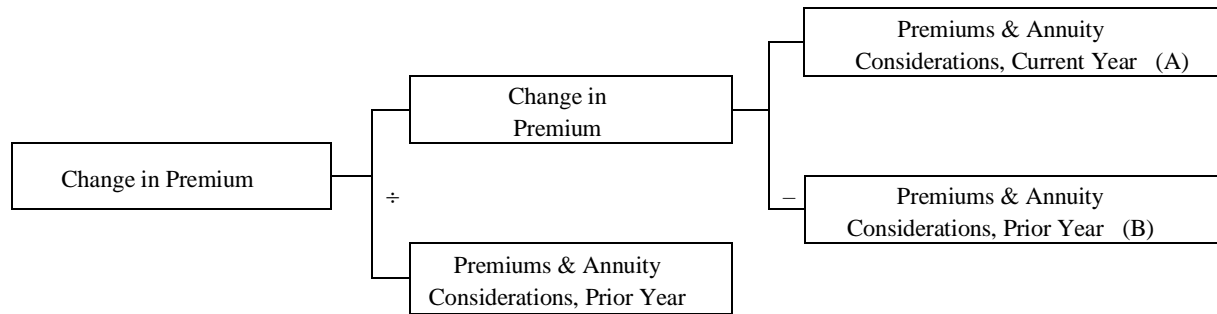
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In evaluating the significance of the following ratios for a particular insurer, familiarity with the insurer's history, management and operations are of particular importance. If an insurer increases or decreases its premium rapidly, changes its mix 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 49, Line 99, Column 2, 3, 4, 5, 7

B. Premiums & Annuity Considerations, Prior Year

PY: Page 49, 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*