An Introduction to Reserving and Financial Reporting Issues for Non-Traditional Reinsurance

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AN INTRODUCTION TO RESERVING AND FINANCIAL REPORTING ISSUES FOR NON-TRADITIONAL REINSURANCE

ABSTRACT

Non-traditional reinsurance contracts, and finite risk reinsurance contracts in particular, are structured differently from traditional reinsurance. The incorporation of special features that make each contract unique tends to preclude standard portfolio loss reserving. This paper introduces the basic features related to common types of finite risk reinsurance contracts that provide prospective (e.g., aggregate stop-loss) or retroactive (e.g., adverse development cover) coverage. This paper will also discuss some of the considerations related to financial reporting issues for non-traditional reinsurance. The appendix will provide basic examples of prospective and retroactive deals to illustrate the balance sheet and income statement impacts for both the buyer and seller of finite risk reinsurance.

I. INTRODUCTION

Non-traditional reinsurance is characterized by the transfer of risk through customized arrangements that are produced for the specific needs of a cedant. For finite risk arrangements, the risk transferred from the ceding entity will be limited and correspond to a limited upside for the reinsurer. Though finite risk reinsurance is a subset of non-traditional reinsurance, the terms "non-traditional" and "finite" are used interchangeably throughout this paper.

When finite risk reinsurance first emerged, it provided an alternative to traditional reinsurance for both reinsurers and cedants. Ceding companies found a less expensive mechanism to smooth earnings and to address other issues such as adverse loss development and diminished underwriting capacity. Reinsurers, on the other hand, began to incorporate overall aggregate limits of liability and were better able to protect themselves against adverse selection and catastrophic losses. As cedants participated to a greater degree in their own ultimate loss exposure, finite reinsurance began to align the interests of the ceding company with the reinsurer. This, in turn, led to increased flexibility in the structure of reinsurance arrangements and enabled cedants to address needs that were not satisfactorily met by traditional reinsurance. Common uses of finite risk reinsurance were:

- Deferral of taxes
- Discounting of loss reserves
- Earnings stabilization
- Risk management related to mergers and acquisitions

- Surplus protection via all of the above

These uses continue to drive the demand for finite risk reinsurance (although the current interest rate environment has reduced the impact of the time value of money). In recent years, however, the significant increases in the cost of traditional reinsurance have contributed to the demand for finite risk arrangements. Additionally, for emerging issues like terrorism or mass torts such as asbestos and toxic mold, finite risk reinsurance may be the most appropriate approach, from both the cedant and reinsurer perspective, to provide adequate protection.

II. TYPES OF CONTRACTS AND COMMON STRUCTURAL FEATURES

A. Types of Non-Traditional Reinsurance Arrangements – Retroactive

The most common retroactive arrangements are loss portfolio transfers (LPT's) and adverse development covers (ADC's). For both types of deals, the reinsurer provides protection from the loss reserve deterioration for claims that have already been incurred. The reinsurer assumes a portion of the ceding entity's reserve uncertainty in return for a fixed premium.

Loss portfolio transfers. With respect to LPT deals, the ceding entity is able to reduce future loss payment uncertainty by transferring a "portfolio" of reserves off of its balance sheet to the reinsurer. The premium paid to transfer the reserve uncertainty is based on the present value of the liabilities, plus an additional amount to reflect the risk to the reinsurer of further development of the transferred liabilities. LPT's protect the ceding

entity from the deterioration of past written business and are often used in mergers or acquisitions in order to wall off future exposure to loss from discontinued operations.

Adverse development covers. ADC deals are also intended to protect the ceding entity against unexpected development of past liabilities. In these cases, however, the ceding entity retains the underlying portfolio of loss reserves. As a result, ADC deals do not reduce reserve leverage to the same extent as with LPT's. For these deals, the premium is based on the reinsurer's evaluation of both the potential for adverse development and the expected timing of additional loss payments. ADC deals typically provide a specific dollar amount of coverage for potential development in excess of the ceding entity's carried reserves at the selected accounting date.

In general, LPT deals tend to apply to smaller segments of business (e.g., a single line of business that the cedant has exited) than ADC deals, which commonly address larger groupings (e.g., all casualty lines of business combined).

B. Types of Non-Traditional Reinsurance Arrangements – Prospective

The most common prospective finite reinsurance arrangements are aggregate stop-loss covers, finite quota share treaties, and spread loss covers.

Aggregate stop-loss covers. The typical use of aggregate stop-loss covers is to stabilize earnings of the ceding entity. For this type of deal, the reinsurer typically provides a loss ratio corridor of protection above the ceding entity's planned future loss ratio in return for a fixed premium. Aggregate stop-loss reinsurance contracts often cover multiple

(typically three to five) years together; this further reduces the volatility of the ceding entity's earnings. (See Illustration 1 in the Appendix for a sample of this type of deal.)

Finite quota share treaties. In a traditional quota share agreement, the reinsurer assumes a fixed percentage of the ceding entity's premium and corresponding losses and returns a ceding commission to the cedant. Finite quota share agreements are generally similar to and provide the same benefits as traditional quota share reinsurance. Like traditional quota share agreements, the primary benefit of finite quota share protection to the cedant is surplus relief, which in turn provides an increase in underwriting capacity. The main difference between finite quota share and traditional quota share is the aggregate limit of liability. For a finite quota share agreement, this is typically reflected via features such as a loss ratio cap for the reinsurer or a loss corridor, which defines a layer of loss for which the reinsurer does not pay the cedant. Also, the net cost of finite quota share reinsurance is typically less than traditional quota share because profits tend to be returned to the cedant. (See Illustration 2 in the Appendix for a sample of this type of deal.)

Spread loss covers. Spread loss covers are similar to multi-year aggregate stop-loss deals; their focus is also to stabilize future years' earnings. With spread loss covers, the reinsurer commits to pay a defined level of loss across a number of future years. Like aggregate stop-loss covers, spread loss coverage can reduce the impact on earnings of specific covered events (e.g., catastrophes) or claim experience that is worse than expected.

C. Common Features of Finite Risk Reinsurance Deals

Although each finite risk reinsurance deal is tailored to the ceding entity's specific needs, finite risk contracts tend to have a number of common structural features. The most significant feature is the contractual limitation on the ultimate amount of losses to be paid under the arrangement. By definition, this is found in all finite reinsurance deals, but aggregate limits are increasingly common in traditional reinsurance arrangements as well.

Other features that are frequently incorporated into finite risk reinsurance deals include the following:

- Recognition of the time value of money
- Cedant participation in upside (profit sharing) and downside (additional premiums)
- Sub-limits of liability
- Multiple years
- Cancellation and commutation provisions

Time value of money. The time value of money is most commonly recognized in finite reinsurance by the use of an "experience account" that is initially funded by the premium paid by the ceding entity. For both retroactive and prospective deals, the experience account is typically established as the initial premium paid by the ceding entity, less the reinsurer's explicit provision for profit (the "margin") and brokerage fees. Loss payments under the contract are paid from the experience account and, while the

experience account balance (EAB) is positive, it accrues interest at a negotiated interest rate. When the experience account is held by the ceding entity ("funds withheld" basis), the interest credit tends to be higher than when the experience account is held by the reinsurer ("funds held/transferred"). In a funds transferred scenario, the credit is usually based on the risk-free interest rate. In a funds withheld scenario, the credit is higher because the reinsurance premium is essentially loaned back to the ceding entity. The higher interest rate for funds withheld scenarios also accounts for the credit risk to which the reinsurer is exposed; the reinsurer is still obligated to the cedant if the experience account is inadequate.

Cedant participation. In finite risk reinsurance, it is common for the ceding entity to share both the potential upside and downside of the contract. When experience is favorable, most contracts allow for any positive experience account balance to be refunded to the ceding entity. The reinsurer, in fact, typically has a limited and small upside that is contractually defined as its margin. Due to the limited upside to the reinsurer, finite reinsurance contracts may be "overfunded" in order to minimize the downside to the reinsurer. This tends to be acceptable to cedants because of the profit sharing arrangement, which makes it likely that the reinsurer will return any initial overfunding to the cedant.

Most prospective reinsurance arrangements also have provisions that ensure the ceding entity participates in the downside. For stop-loss and spread loss covers, this is commonly reflected in additional premiums to be paid depending on the cedant's loss

experience. When these additional premiums (AP's) are contractually defined, they may be referred to as "hard AP's." On the other hand, "relationship" agreements by which a ceding entity promises to renew or extend a current contract in order to make a reinsurer whole for adverse experience represent "soft AP" arrangements. Soft AP arrangements continue to exist, but they are increasingly rare in the current reinsurance environment. For finite quota share contracts, the ceding entity typically participates in the upside and downside by way of a sliding scale ceding commission, which is increased for favorable experience and decreased for poor experience.

Sub-limits of liability. Another means for reinsurers to reduce its downside is to incorporate sub-limits of liability. For retroactive deals, sub-limits are typically used to reduce the reinsurer's exposure to losses that are unusually difficult to estimate. For prospective deals, sub-limits are used to limit the exposure to shock losses.

Reduced life span of contracts. In most cases, profit sharing occurs at commutation of the reinsurance contract. This is typically initiated by the ceding entity although when the commutation may occur is contractually defined. Unlike most traditional reinsurance agreements, finite risk reinsurance is expected to commute soon after the cedant has achieved the intended benefit. From the reinsurer's perspective, early commutation can be appealing because it accelerates the recognition of the margin. Assuming any related experience account balance is projected to be positive, finite risk deals tend to commute shortly after the contractual window opens. Although the life span tends to be longer when interest rates are lower (and thus the experience account grows more slowly), the

average life span of finite risk deals is shorter than that of traditional reinsurance arrangements.

III. RESERVING ISSUES

The basic characteristics of finite risk reinsurance (limited risk transfer, investment income credit, profit sharing between cedant and reinsurer, commutation clauses) are unique for each contract. In addition to the non-homogeneous nature of finite risk reinsurance contracts, the underlying exposure typically varies for each contract. As each finite risk reinsurance arrangement is tailored to meet the specific needs of the cedant, it is practically impossible to apply standard actuarial loss reserving methods to a group of finite contracts. As a result, ultimate loss estimation by the reinsurer is done on a deal-by-deal basis.

Included below is a list of basic issues to consider when estimating the reinsurer's liabilities for a particular finite risk deal.

A. Understanding the Structure – Start with the Pricing Analysis

A key initial step to projecting the reinsurer's ultimate liabilities associated with a particular finite risk deal is to understand its structural features. Following is a list of some preliminary questions to address for this step:

- What is the purpose of the deal? Does the cedant have surplus constraints, rating agency concerns, etc?

- Is the contract retroactive or prospective?
- What lines of business are covered?
- What type of coverage is provided? For other than quota share arrangements, what layers of coverage does the reinsurer provide? For quota share arrangements, what is the assumed percentage and are there any loss corridors for the cedant?
- What annual limits, sub-limits and aggregate limits of the reinsurer's liability exist?
- Does the contract qualify for reinsurance treatment or is deposit accounting required?
- Is loss reserve discounting used?
- Is there an experience account? If so, what is the initial funding and how is the interest credit determined?
- Is there a provision for additional premiums from the cedant?
- What is the reinsurer's margin?
- Is there a commutation provision? If so, which party (reinsurer or cedant) can commute and under what circumstances?

This is not intended to be an exhaustive list and these are generally not unique to finite risk deals. It is, however, particularly important to address some of these items in order to appropriately reflect the issues specific to each individual deal. When estimating losses at the individual deal level, the relative importance of these issues is magnified. From this list, it is clear that many of the key issues should be addressed in the pricing analysis from the initial underwriting process.

B. Considering the Experience Account

In many cases, finite risk deals that fund contractual loss payments via an experience account will include a provision that allows the cedant, and sometimes also the reinsurer, to commute the contract. At the commutation date, a significant portion of the experience account balance is typically returned to the ceding entity and the reinsurer is released from future obligations to the cedant. The experience account refund is sometimes known as the "profit commission" and is frequently equal to 100% of the experience account balance. As a result, many reinsurers tend to hold reserves (including unearned premium) based on a 100% combined ratio, less its brokerage costs and margin. This approach makes sense when the experience account balance is projected to be positive. A question arises, however, of how to address situations in which the experience account is projected to be negative.

As discussed earlier, an experience account is typically equal to premium payments by the cedant, less the reinsurer's margin and contractual loss payments, plus investment income accrued via an interest credit on the balance. If, however, the loss payments for the deal are requested earlier than expected or the interest rate environment deteriorates and the interest credit is lower than expected, it is possible that the experience account may be exhausted. If additional premiums are not available to replenish the experience account in these cases, the reinsurer may not realize its full margin and could be exposed to an economic loss for the contract.

C. Monitoring Actual and Expected Loss Emergence

One of the central issues related to reserve estimation is how the actual loss emergence compares to the expected emergence. This is a common issue for reserving, but it has extra significance for non-traditional reinsurance due to the impact of the time value of money.

For the reinsurer, problems can emerge with changes in either the timing or magnitude of reported losses from the ceding entity. Generally, a slowdown or decrease in loss reporting is favorable to the reinsurer. If, however, actual losses exceed the expectations, there are different issues to consider.

First, a temporary speed-up in loss reporting by the ceding entity will reduce the reinsurer's benefits from the time value of money. As the experience account is utilized to pay losses to the cedant earlier than anticipated, the interest credit will not grow as expected. As a result, the experience account could be exhausted before the reinsurer's obligations have been settled. Thus, even if the initial ultimate loss estimate were accurate on an undiscounted basis, acceleration in claim payments could lead to an economic loss for the reinsurer.

If actual losses during a reporting period are consistently greater than expected, a second problem may emerge: the initial loss projection could be understated. Clearly, this can also exhaust the experience account earlier than anticipated. A related and more subtle issue is whether the cedant begins to under-report losses to the reinsurer. As most finite

deals include provisions for additional premiums from the cedant, the cedant will have incentive to delay the triggering of any AP payment to the reinsurer. A delay in the transfer of AP's form the cedant will increase the likelihood of an economic loss to the reinsurer.

(See Illustrations 3A and 3B for examples of the potential impact of a reporting speed-up and slowdown.)

Unlike deals with favorable claim experience, which the cedant is expected to commute, deals that generate net losses to the reinsurer will require a more rigorous analysis for the purpose of estimating the reinsurer's ultimate liabilities.

D. Projecting the Interest Credit

The time value of money is most frequently reflected in finite risk reinsurance via an experience account, which accumulates interest until losses are paid from the account. In most cases, the interest credit for the experience account is based on a risk-free interest rate. The credit typically reflects a modest spread above the risk-free rate – the ceding entity and reinsurer will negotiate the spread, which tends to vary depending on whether the experience account is a funds withheld or funds transferred arrangement. For the purpose of projecting the future experience account balance, it is necessary to estimate the future values of the risk-free interest rate. A common and simple approach is to utilize the term structure of interest rates based on the spot rates of U.S. Treasury securities.

E. Testing the Sensitivity of Loss Projections

For any reinsurance deal, it is important to test the sensitivity of the subject losses to variations in the assumptions that underlie the reinsurer's loss projections. The key concerns to the reinsurer are the level of subject losses and the corresponding timing of the payout of those losses. Understanding the potential variability of the losses is critical in order for the reinsurer to determine a range of reasonable loss estimates as well as the best estimate within that range.

For retroactive reinsurance, sensitivity testing is often more simplistic, though no less important, than for prospective reinsurance. For LPT and ADC deals, the subject losses have already been incurred so potential adverse (or favorable) development of the subject losses is the initial focus. Varying the tail of the loss development patterns that underlie the initial loss projections is a simple and reasonable approach to testing the sensitivity of the nominal loss amounts.

For prospective reinsurance, a common approach to sensitivity testing is stochastic simulation of future loss levels. Given that the subject losses have not been incurred for prospective reinsurance, this usually involves modeling the claim frequency and severity components of loss. A notable benefit of simulations is that the user can identify confidence level percentiles for the expected reinsured losses.

From the reinsurer's perspective, the timing of the loss payout can be as important as the actual amount to be paid. Thus, for both prospective and retroactive reinsurance deals, it is also important to review alternative payout patterns together with the various loss projections. By combining alternative payout patterns with various expectations of the nominal loss amounts, the reinsurer can produce a range of estimates of the economic value of the coverage provided.

F. Considering Bulk Reserves

Due to the large size of most individual finite reinsurance deals and the intensive underwriting process involved, these books of business tend to be comprised of a small number of contracts. As each deal has unique features and is reserved individually, the law of large numbers with respect to loss reserving does not typically apply to finite reinsurance. Thus, it is worthwhile to consider the appropriateness of bulk or "non-specific" reserves for the overall book of finite reinsurance.

At issue is whether the total carried reserve for all contracts reflects an adequate provision for the potential of adverse scenarios. A key consideration in debating this topic is how the reinsurer defines its "best estimate" of loss for individual contracts. While many approaches are possible, three approaches are readily available based on the reinsurer's simulation of future loss outcomes.

First, there is the most likely outcome (i.e., the mode) of the loss distribution. The mode might be appealing because it is the single outcome with the greatest probability of

occurring. The problem with this, however, is that using the mode completely ignores all other possible outcomes. Consider an example in which 90% of the possible outcomes for a contract produce loss estimates of $0 and 10% produce $1,000,000 – is it reasonable to carry $0 for this contract? Suppose each contract in the book has a similar loss distribution – would $0 be an appropriate reserve to carry for the entire book? The positively skewed nature of most aggregate loss distributions implies that the mode could be grossly inadequate in some cases. As the contracts' loss distributions are increasingly skewed to the right, there is a greater need for a bulk reserve when the mode underlies the loss reserve best estimate.

To address the basic problem with the mode, an alternative is the expected value of the loss distribution (i.e., the mean). The mean is a weighted average of all projected outcomes and reflects the expected probability that each could occur. The mean value for each contract, therefore, explicitly reflects a provision for all expected scenarios.

A different approach would be to book loss estimates that correspond to a specific confidence level for each contract. The likely expectation underlying this approach is that the selected percentile produces a conservative estimate (otherwise the mean or mode would likely be selected).

In practice, bulk reserves for finite reinsurance are not often used. As noted earlier, many finite risk reinsurance contracts are booked to 100% combined ratios, which will tend to produce conservative estimates in aggregate. A secondary argument against bulk

reserves is that booked reserves are generally undiscounted, so the amount of potential discount is an implicit buffer.

G. Establishing Claim Liabilities When Deposit Accounting is Required

As discussed in Section IV – FINANCIAL STATEMENT REPORTING ISSUES, one of the key issues related to finite risk reinsurance is whether a contract qualifies for reinsurance accounting or deposit accounting. This is strictly a financial reporting issue, however, and does not affect the loss estimation process. The preceding discussion applies equally regardless of whether reinsurance or deposit accounting is used. One difference to note is that, unlike under reinsurance accounting, the deposits and liabilities recorded by the ceding and assuming entities are typically based on the discounted values of the expected subject losses.

IV. FINANCIAL STATEMENT REPORTING ISSUES

A. Reinsurance versus Deposit Accounting

Regardless of the reporting purpose (i.e., GAAP versus statutory), the key issue to address when accounting for finite risk reinsurance contracts is whether reinsurance accounting is permitted or deposit accounting is required. U.S. GAAP financial statements rely on Statement of Financial Accounting Standards (SFAS) No. 113 while statutory accounting depends on Statement of Statutory Accounting Principles (SSAP) No. 62 for guidance in determining when reinsurance treatment is permissible.

With both forms of accounting, reinsurance treatment requires that both underwriting and timing risk be transferred to the reinsurer. The language used to define the conditions of insurance risk transfer is essentially identical; in fact, the U.S. statutory guidance is copied almost verbatim from SFAS 113. Following are the conditions as defined by SFAS 113:

> "a. The reinsurer assumes significant risk under the reinsured portions of the underlying insurance contracts.
>
> "b. It is *reasonably possible* that the reinsurer may realize a *significant loss* from the transaction." (Emphasis added.)

If either of these conditions is not met, deposit accounting is required. For the purpose of evaluating insurance risk transfer, SFAS 113 and SSAP 62 state "an outcome is reasonably possible if its probability is more than remote." In reviewing the potential significance of loss, the accounting statements establish that it is necessary to evaluate the net present value of the cash flows (premiums, commissions, losses, and loss adjustment expenses) from reasonably possible outcomes of the transaction.

It has been frequently observed that the language in SFAS 113 does not specify how to quantify the amount of risk transfer. While some rules of thumb exist, there is a great deal of uncertainty related to the terms *reasonably possible* and *significant loss*. The most commonly cited target is the "10/10 rule," which implies sufficient risk is transferred if the reinsurer has a 10% probability of sustaining a 10% loss. This discussion, however, is not intended to address how to determine whether sufficient risk

is transferred. The interested reader is referred to guidance from the CAS Committee on Valuations, Finance, and Investments ("Considerations in Risk Transfer Testing"). Note, however, that the accounting statements are clear about contractual features that delay the timing of payments from the reinsurer to the cedant. As SSAP 62 states, "any feature that can delay timely reimbursement violates the conditions for reinsurance accounting" and thus requires deposit accounting.

B. Reinsurance Accounting – Prospective versus Retroactive

Contracts that qualify for reinsurance accounting are treated differently depending on whether a contract provides prospective or retroactive coverage. Generally, prospective reinsurance covers incurred losses assumed from future events while retroactive reinsurance covers liabilities from past insurable events. It is possible that some contracts contain both prospective and retroactive provisions. When this occurs, the provisions should be accounted for separately unless this is not feasible, in which case the full contract should be treated as retroactive reinsurance.

Under U.S. statutory accounting, there are some exceptions to the rule for retroactive reinsurance. The following should instead receive prospective reinsurance treatment:

- Structured settlement annuities for individual claims;
- Novations – these are primarily agreements by which the liabilities of the cedant are completely extinguished;
- Termination of or reduced participation in reinsurance treaties; and

- Intercompany agreements that do not produce a gain in surplus as a direct result of the arrangement.

From the ceding entity's perspective, retroactive reinsurance is most commonly used to increase policyholder surplus. This occurs via implicit loss reserve discounting that underlies the pricing of retroactive reinsurance. For example, the ceding entity may be required to book an undiscounted reserve of $100 million related to claims for past events it covered. If the discounted value of these liabilities at the reinsurance contract effective date were $80 million, the reinsurer and cedant might agree to a premium of $88 million. The intent of this deal would be to create an additional $12 million of surplus for the ceding entity as it pays $88 million up front to the reinsurer to assume the future payment obligations with an estimated nominal value of $100 million. For the reinsurer, the $8 million difference between the reinsurance premium and the discounted reserve estimate reflects a provision for both profit and the risk of adverse development of the assumed book of business.

As explicit loss reserve discounting is allowed only in very limited circumstances, accounting treatment of retroactive reinsurance is somewhat different from prospective reinsurance. As the accounting guidance states, this is due to potential abuses related to surplus creation by cedants and the corresponding distortion of underwriting results.

For the ceding entity, it must reflect loss and loss adjustment expense reserves gross of retroactive reinsurance on the balance sheet and all other schedules and exhibits of the

financial statements. The amount of retroactive reinsurance must be shown as a contra-liability on the balance sheet and be reported as a write-in item specifically identified as Retroactive Reinsurance Ceded. In addition, any surplus created by the retroactive reinsurance transaction must be restricted as a special surplus fund. This fund is not released into unassigned surplus until the reinsurance recoveries exceed the consideration paid for the retroactive reinsurance agreement. (See Illustration 4 for an example of the treatment from the ceding entity's perspective.)

For the reinsurer, it must exclude the assumed retroactive reinsurance from loss and loss adjustment expense reserves on the balance sheet and all other schedules and exhibits of the financial statements. The amount of retroactive reinsurance must be shown as a contra-liability on the balance sheet and be reported as a write-in item specifically identified as Retroactive Reinsurance Assumed.

While the balance sheet effects of retroactive reinsurance are similar between GAAP and statutory accounting, one notable difference between the two is reflected on the income statement. Unlike GAAP, statutory accounting allows the immediate recognition of the retroactive reinsurance gain (for the ceding entity) or loss (for the assuming entity) on the income statement. This must be recorded as a write-in item, reflected in Other Income, and specifically identified as Retroactive Reinsurance Gain or Loss. Under GAAP, the immediate recognition of gains or losses from retroactive reinsurance is permissible only if the ceding entity no longer has any obligation to its policyholder.

C. Deposit Accounting

When a finite risk arrangement requires deposit accounting, there is no initial impact on the loss and loss adjustment expense reserve entries on the balance sheet of either party. There is also no initial impact on their income statements.

At the onset, the ceding entity records a deposit (i.e., asset) equal to the net consideration paid to the assuming entity. The assuming entity records a corresponding liability on its balance sheet. Note that this liability is not part of the loss reserve; instead, it is a separate item on the balance sheet and can be viewed as a "loss-equivalent" reserve. As noted in Section III – RESERVING ISSUES, the amount of the deposit or liability is based on the discounted value of the ceded obligation.

After the initial financial reporting date, the balance sheet and income statement reflect adjustments that address: (a) actual payments between ceding and assuming entity; (b) unwinding of the underlying discount; and (c) revisions to the expected amount and timing of future "loss" payments. Item (a) is reflected as a direct adjustment to the deposit or liability held. Items (b) and (c), however, affect both the income statement and the balance sheet.

As long as the timing and amount of the actual cash flows are as expected, item (b) is the only adjustment to the income statement. This is calculated as the product of the effective yield and the remaining deposit. For the ceding entity, item (b) is a credit to

interest income and an increase to the deposit asset. For the assuming entity, item (b) is reflected as an interest expense and an increase to the liability.

If, however, the timing or amount of an annual cash flow differs from expected, the effective yield will be recalculated to reflect the revised expected future timing and amounts. The intent is to ensure that the deposit declines to zero at the same time as when the loss payments are completed. Also, the difference between actual and expected cash flow during the reporting period will also be reflected as interest income/expense and a corresponding increase/decrease to the deposit or liability. (See Illustration 5 for an example of the accounting from the reinsurer's perspective.)

Note that the accounting guidance does not require that both cedant and reinsurer account for a reinsurance contract the same way. While it is unusual, there can be instances when one party utilizes reinsurance accounting while the counterparty uses deposit accounting.

V. CONCLUSIONS

For most finite deals, which are addressed on a deal-by-deal basis, reserving is based on the initial pricing analysis with the monitoring of critical deal-specific variables. When subject claim experience or the interest rate environment is favorable, cedants are expected to commute contracts in order to gain the profits embedded in the experience account balance. In these scenarios, reinsurers frequently base reserves on a 100% combined ratio for the contract. If, however, loss emergence is faster or greater than

expected or if interest rates are lower than projected, the cedant's experience account balance might not be sufficient to cover the reinsurer's liabilities. As a result, the reinsurer could suffer a net loss, so it is very important to monitor both loss emergence and the projected interest credit. This will enable the reinsurer to assess the adequacy of the experience account, to determine whether reserves in excess of the experience account balance are necessary, and to determine whether additional premiums will be required. Clearly, these considerations combined, together with the accounting issues that apply to all reinsurance contracts, present some different challenges from traditional reinsurance. Hopefully, this paper will provide the reader with a foundation from which to address the main reserving and financial reporting issues related to this family of insurance products, which continue to emerge.

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VII. APPENDIX

Illustration 1 – Sample Aggregate Stop-Loss Deal

Illustration 2 – Sample Finite Quota Share Deal

Illustration 3 – Monitoring Loss Emergence

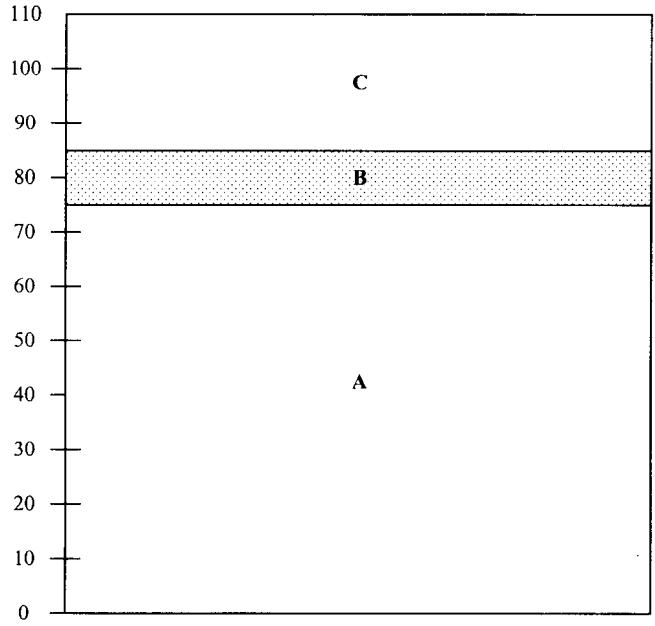
Illustration 4 – Retroactive Reinsurance

Illustration 5 – Deposit Accounting

Background:

Coverage Period:	1/1/03-12/31/05
Subject premium:	$50,000,000
Stop-loss attachment point:	75%
Limit:	10%
Coverage:	10% XS 75% or $5M XS $37.5M
Interest credit:	4.25%

Commutation provision: cedant will receive 100% of experience account balance if commutation occurs after the end of the exposure period (i.e., 1/1/06 or later).

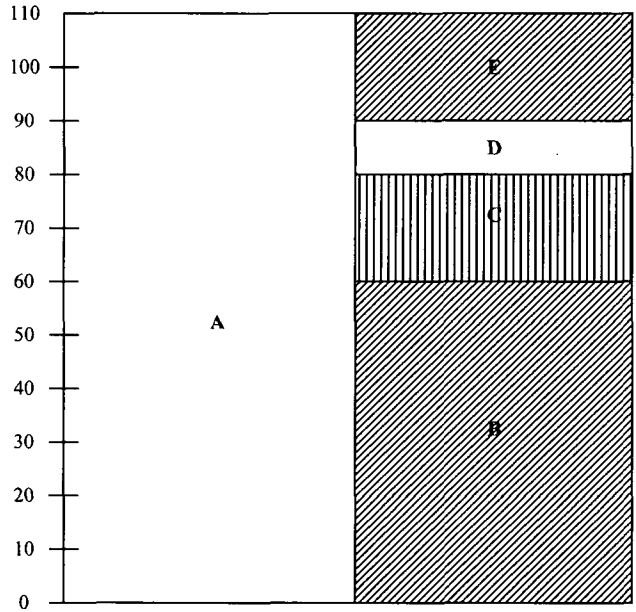


A = retained by ABC below the stop-loss attachment point loss ratio of 75%
B = assumed by XYZ; loss ratio layer from 75% to 85%
C = retained by ABC above the stop-loss ratio limit of 85%

Finite Quota Share Illustration 2

Background: ABC would like to reduce its premium leverage in order to expand its volume. ABC enters into a quota share with XYZ in the following scenario:

Quota share percentage:	50%
Expected loss ratio:	65%
Aggregate limit loss ratio:	110%
Expected expense ratio:	30%
Cedingcommission:	
minimum at 60% loss ratio	39%
minimum at 80% loss ratio	19%



A = 50% share retained by ABC
B = 50% assumed by XYZ for loss ratio < 60%, ceding commission = 39%
C = 50% share assumed by XYZ with sliding scale ceding commission
D = loss ratio corridor from 80% to 90%, retained by ABC
E = 50% share assumed by XYZ for loss ratio from 90% to 110% (aggregate limit)

Expected Loss Payout and Experience Account Balance

Nominal Ult. 100,000,000

Calendar Year	Payout Pattern %	Payout Pattern $	Interest Credit at 5%	Losses Paid	Exp. Acct. Balance
0					85,635,238
1	15.0%	15,000,000	4,281,762	(15,000,000)	74,917,000
2	25.0%	25,000,000	3,745,850	(25,000,000)	53,662,850
3	25.0%	25,000,000	2,683,143	(25,000,000)	31,345,993
4	10.0%	10,000,000	1,567,300	(10,000,000)	22,913,292
5	10.0%	10,000,000	1,145,665	(10,000,000)	14,058,957
6	10.0%	10,000,000	702,948	(10,000,000)	4,761,905
7	5.0%	5,000,000	238,095	(5,000,000)	0
Total	100.0%	100,000,000			

Present Value of Expected Loss 85,635,238

Actual Loss Payout and Experience Account Balance

Calendar Year	Payout Pattern %	Payout Pattern $	Interest Credit at 5%	Losses Paid	Exp. Acct. Balance
0					85,635,238
1	25.0%	25,000,000	4,281,762	(25,000,000)	64,917,000
2	30.0%	30,000,000	3,245,850	(30,000,000)	38,162,850
3	30.0%	30,000,000	1,908,143	(30,000,000)	10,070,993
4	10.0%	10,000,000	503,550	(10,000,000)	574,542
5	5.0%	5,000,000	28,727	(5,000,000)	(4,396,731)
6	0.0%	0	NA	0	NA
7	0.0%	0	NA	0	NA
Total	100.0%	100,000,000			

Comments: When the payout pattern is accelerated, the experience account is exhausted before all claims are settled. The reinsurer is still obligated to pay the remaining $4.4 million and thus incurs a net loss for this deal.

Expected Loss Payout and Experience Account Balance

Nominal Ult. 100,000,000

Calendar Year	Payout Pattern %	Payout Pattern $	Interest Credit at 5%	Losses Paid	Exp. Acct. Balance
0					85,635,238
1	15.0%	15,000,000	4,281,762	(15,000,000)	74,917,000
2	25.0%	25,000,000	3,745,850	(25,000,000)	53,662,850
3	25.0%	25,000,000	2,683,143	(25,000,000)	31,345,993
4	10.0%	10,000,000	1,567,300	(10,000,000)	22,913,292
5	10.0%	10,000,000	1,145,665	(10,000,000)	14,058,957
6	10.0%	10,000,000	702,948	(10,000,000)	4,761,905
7	5.0%	5,000,000	238,095	(5,000,000)	0
Total	100.0%	100,000,000			

Present Value of Expected Loss 85,635,238

Actual Loss Payout and Experience Account Balance

Calendar Year	Payout Pattern %	Payout Pattern $	Interest Credit at 5%	Losses Paid	Exp. Acct. Balance
0					85,635,238
1	15.0%	15,000,000	4,281,762	(15,000,000)	74,917,000
2	20.0%	20,000,000	3,745,850	(20,000,000)	58,662,850
3	20.0%	20,000,000	2,933,143	(20,000,000)	41,595,993
4	15.0%	15,000,000	2,079,800	(15,000,000)	28,675,792
5	10.0%	10,000,000	1,433,790	(10,000,000)	20,109,582
6	10.0%	10,000,000	1,005,479	(10,000,000)	11,115,061
7	10.0%	10,000,000	555,753	(10,000,000)	1,670,814
Total	100.0%	100,000,000			

Comments: When the payout pattern is slower than expected, there is a positive experience account balance when all claims are settled. This is profit that will typically be returned to the cedant. In many cases, the cedant will commute the contract in order to recognize this gain prior to the final claim settlement.

Retroactive Reinsurance Illustration 4

Background: ABC Insurance Company (ABC) would like to get surplus relief via a loss portfolio transfer to XYZ Reinsurance Company (XYZ) effective 12/31/03. ABC chose to transfer the reserves for its book of accountants professional liability, which it has been running off since exiting that market. At 12/31/03, the undiscounted unpaid losses for this book were $100.0 million.

Prior to effecting the LPT, total assets are $1.25 billion, total loss reserves are $1.0 billion. Assume no balance sheet activity other than the LPT and its runoff.

Expected payout pattern:

Calendar Year	2004	2005	2006	2007	2008	2009	2010
% Paid	15%	25%	25%	10%	10%	10%	5%

PV at 5% (millions) $85.6

Reinsurance premium: $90.0

Ceding Entity Accounting:

12/30/03 (Prior to LPT)

Assets		Liabilities, Surplus, and Other Funds	
Cash	$1,250.0	Unpaid loss	$1,000.0
		Policyholdersurplus	250.0

12/31/03 (Subsequent to LPT)

Assets		Liabilities, Surplus, and Other Funds	
Cash	$1,160.0	Unpaid loss	$1,000.0
		Retro reinsurance ceded	(100.0)
		Totalliabilities	$900.0
		Special surplus from retro re	$10.0
		Unassigned surplus	250.0
		Policyholdersurplus	$260.0

Comments:

(1) Cash decreases by the amount of the LPT premium ($90.0 million) while liabilities decrease by the amount of the transferred reserve ($100.0 million).

(2) The cedant cannot gain from the surplus relief until the losses paid/reimbursed exceed the consideration paid to the reinsurer. As a result, the surplus gain ($10.0 million) is restricted and recorded as "special surplus from retroactive reinsurance."

...

12/31/08

Assets		Liabilities, Surplus, and Other Funds	
Cash	$1,160.0	Unpaid loss	$915.0
		Retro reinsurance ceded	(15.0)
		Totalliabilities	$900.0
		Special surplus from retro re	$10.0
		Unassigned surplus	250.0
		Policyholdersurplus	$260.0

12/31/09

Assets		Liabilities, Surplus, and Other Funds	
Cash	$1,160.0	Unpaid loss	$905.0
		Retro reinsurance ceded	(5.0)
		Totalliabilities	$900.0
		Special surplus from retro re	$5.0
		Unassigned surplus	255.0
		Policyholdersurplus	$260.0

12/31/10

Assets		Liabilities, Surplus, and Other Funds	
Cash	$1,160.0	Unpaid loss	$900.0
		Retro reinsurance ceded	0.0
		Totalliabilities	$900.0
		Special surplus from retro re	$0.0
		Unassigned surplus	260.0
		Policyholdersurplus	$260.0

Comments:

(1) As of 12/31/08, $85.0 million of the $100.0 million transferred has been paid. This does not exceed the LPT premium, so the $10.0 million of surplus relief is still restricted.

(2) As of 12/31/09, $95.0 million of the $100.0 million transferred has been paid. The $5.0 million of transferred loss still to be paid is restricted surplus; the remaining $5.0 million of the $10.0 million of surplus relief is earned as unassigned surplus.

(3) As of 12/31/10, all transferred liabilities have been paid and the full $10.0 million of relief has been earned.

Deposit Accounting Illustration 5

Background: XYZ Re provides excess-of-loss coverage to ABC Primary Insurance Company. XYZ will not begin to reimburse ABC until 2 years from the effective date of the contract.

Expected Loss: 50,000,000 (initial)
51,000,000 (revised at end of year 1)

Expected Payout:

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
0%	0%	25%	30%	30%	10%	5%

Premium: 40,399,180 (present value at 5% of initial expected loss)

XYZ Accounting:

	Interest Expense	Cash Payment	Deposit Liability
Initial liability			40,399,180
Y1 interest at 5%	2,019,959		42,419,139
EOY1		0	42,419,139
Upward Revaluation	1,000,000		43,419,139
Y2 interest at 3.81%	1,614,448		45,033,587
EOY2		0	45,033,587
Y3 interest at 3.81%	1,713,952		46,747,539
EOY3		(12,750,000)	33,997,539
Y4 interest at 3.81%	1,779,184		35,776,723
EOY4		(15,300,000)	20,476,723
Y5 interest at 3.81%	1,361,641		21,838,364
EOY5		(15,300,000)	6,538,364
Y6 interest at 3.81%	831,155		7,369,520
EOY6		(5,100,000)	2,269,520
Y7 interest at 3.81%	280,480		2,550,000
EOY7		(2,550,000)	0

Comments:

(1) Due to the 2-year delay before payments by XYZ, this deal does not transfer timing risk and therefore requires deposit accounting.
(2) XYZ initially records a liability equal to the consideration paid by ABC.
(3) Each year, unwinding of discount is reflected as interest expense on the income statement and as an increase to the deposit liability on the balance sheet.
(4) At the end of Year 1, the estimated subject losses are revised upward by $1,000,000. This is reflected as interest expense to XYZ and also as an increase to the deposit liability. In addition, the effective yield is revised from 5% to 3.81% to reflect the expect timing and amount of future payments. The effective yield is calculated so that the liability declir to $0 at the same time as the final loss payment is made.