

LOSS PORTFOLIOS: FINANCIAL REINSURANCE*

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Abstract

The property-casualty insurance operating environment has changed dramatically. Total return is more a function of investment results than ever before. Competition has pressured rate levels. And a greater proportion of total premiums is coming from "long tail" lines, making reserving more difficult.

Reinsurance is becoming somewhat more financially oriented. Loss portfolio transfer reinsurance is becoming popular for a variety of reasons, not the least of which involves poor operating results. This paper surveys loss portfolio transfer reinsurance from a benefit-cost standpoint and includes actuarial, tax, accounting and contractual aspects necessary to the evaluation process.

With the advent of high interest rates and cash flow underwriting, composite ratios have skyrocketed to unprecedented high levels. For a variety of reasons, insurance executives seeking to improve results are investigating loss portfolio transfer reinsurance.

In the simplest terms, this form of financial reinsurance involves the transfer of a portfolio of loss liabilities from a cedent to a reinsurer at a price. The cedent extinguishes his liability with a favorable cash (or equivalent) outlay. The consideration is generally based on a discounted cash flow analysis of loss reserves plus a reinsurer loading. The amount by which the extinguished liability exceeds the consideration becomes a financial benefit to the cedent. The loss liability may be for case reserves only, case reserves plus development, or case reserves plus development and IBNR losses. The transfer can include allocated and sometimes unallocated loss adjustment expenses. Transferred liabilities may belong to a single class of business, a territory, a policyholder, or an accident year. The transfer may apply to all net (of other valid reinsurance, collectible or not) losses, or depend on an aggregate attachment level (in dollars or days) or size per occurrence.

* Mr. Steeneck's paper was first submitted to the Casualty Actuarial Society in 1983. References in this paper to future events and to future time periods should be interpreted accordingly.

Understanding financial reinsurance is becoming a top priority among insurance executives, regulators, stock security analysts, and others in the property-casualty insurance field.¹ Balance sheets and income statements can become less meaningful. And the volume of loss portfolio transfers is increasing. Industry observers and participants estimate that over \$1 billion of such transactions occurred during 1983. The following example, albeit a dramatic one, shows the effect loss portfolio reinsurance can have on a company's accounting position.

A New York based reinsurance company recently sold a loss portfolio at about the same time as a regular triennial examination (12/31/80) found liabilities exceeded assets by \$12,400,000. The result of the loss portfolio reinsurance transfer left the company with a healthy income statement and a statutory surplus of \$10,800,000! Although the details are unknown, we can speculate that assets could have been \$200 million and examined liabilities estimated at \$212.4 million. Suppose \$50 million of loss reserves were sold for \$26.8 million. The net resulting liabilities would be \$162.4 million with assets of \$173.2 million. Statutory surplus would be the difference or \$10,800,000. The \$23.2 million gain could be reflected in the income statement.

The following two lists outline business purposes served by loss portfolio transfers and the costs the cedent must consider. The paper then treats the actuarial, tax, and accounting aspects. Then contractual and pricing considerations are mentioned. Finally, the uncertain regulatory environment is noted.

BUSINESS PURPOSES LOSS PORTFOLIO TRANSFERS SERVE

Depending on the financial position of the insurance company, several but not all of the following nine purposes may be attractive.

1. Improve underwriting results. By converting future investment income into current underwriting income, the composite ratio and income statement are improved. The case of the New York based reinsurance company loss portfolio transaction exemplifies these effects.
2. Increase GAAP earnings. In the case of the New York reinsurer, the loss portfolio transaction increased GAAP earnings directly by \$23.2 million.
3. Improve GAAP deferred tax position. By raising GAAP taxable income the validity of the tax deduction for other underwriting losses is demonstrated.

¹ Mary Rowland, "Games insurers play with loss reserves," *Institutional Investor*, November 1983.

4. Increase surplus. The after-tax benefit goes directly into statutory surplus. Later in this paper, examples of the accounting treatment for loss portfolio transfers will illustrate the generation of underwriting income which flows into the surplus account.
5. Strengthen loss reserves. A cushion between carried loss reserves and possible adversely developing loss reserves will strengthen the cedent's balance sheet implicitly.
6. Improve NAIC IRIS Test results. This type of reinsurance is not penalized as are surplus relief treaties. Favorable Best's ratings may be retained.
7. Maintain premium volume. Ceded premium need not be affected but could be if controls on premium to surplus ratios are required.
8. Terminate a segment of business instantly. This was the original purpose of loss portfolio transfers.² Certain medical malpractice occurrence form writers may be considering a rapid exit from the business. Rather than running off the associated liabilities, they may sell their complete books.
9. Discount reserves. Without setting a precedent and changing accounting methods, the cedent effectively can discount reserves. Other industries have recently received SEC endorsement of accounting treatments termed "insubstance defeasance." The balance sheet is strengthened as a large amount of old debt is retired while paying for it with a smaller face amount of new debt at a higher rate. The ceding insurer's large debt (loss reserves) is replaced with a smaller debt (loss portfolio transfer payment) reflecting a higher interest rate.

COST CONSIDERATIONS TO LOSS PORTFOLIO TRANSFERS³

1. Decreases future GAAP earnings and surplus increases. The current year surge in GAAP earnings (see purpose #2) is at the cost of future investment income. Recall that assets are reduced by the transfer payment amount.
2. Adds reinsurance costs not budgeted. This includes reinsurer expenses, profit, and risk charge.

² For example, in 1595 "one Roemer Visscher of Amsterdam took over the insurance of certain marine risks, because the original insurer, Jacob Bruynsen Smallinck, had gone bankrupt." (Excerpted from a speech by Mr. Michael Felts, CAS Special Interest Seminar on Reinsurance, 1982.)

³ Some of these business purposes and cost considerations come from a speech by Mr. John Murad at the American Academy of Actuaries Loss Reserve Seminar, 1983.

3. Reduces the liquidity of assets. The purchase may cause a cedent to keep taxable bonds (with higher coupons, effectively shielded from taxes if in a non-taxable position) and sell tax-exempts (generally considered to be more easily marketed at favorable prices). Other liquid assets may also be sold, leaving the less liquid ones.
4. May subject cedent to future taxes. If the cedent gets into a future taxable position and has retained less liquid taxable bonds, the after-tax investment returns may not be optimized.
5. Can create a capital loss by the sale of bonds to purchase the reinsurance.
6. Can lose tax deferred status. If cedent is in a taxable position, actual payment of taxes can occur.
7. Will likely distort schedules O and P. The abrupt decrease in loss and expense reserves and surge in payments can distort any loss ratio, loss development, or triangle projection analysis.
8. Creates dependence on reinsurer security. The possible non-collectibility of the reinsurance (by insolvency or dispute in coverage) has a cost which is difficult to quantify.
9. May create future costs.
 - a. The transaction may prove unacceptable to regulators, tax authorities, and auditors from a risk transfer perspective. The consideration paid by the cedent may overfund the loss transfer especially if payment schedules are imposed on recoveries. Open ended retrospective adjustments of the consideration will also fail the risk transfer test.
 - b. The company's accounting may have to be restructured as the accounting profession and regulators establish stricter guidelines. Beginning in 1984, the NAIC blank will require disclosure of loss reserves ceded, the consideration, the effect on underwriting results and statutory surplus, and limiting schedules of actual recovery. Insurance departments may require different accounting treatments than registered by the companies.
 - c. There is a potential loss of company stature in the insurance community. On the other hand, the sale may be judicious.

The predominant statutory and tax accounting requirement of a loss portfolio transfer agreement is that it exhibit legitimate risk transfer. Without it, the transaction is voided and the accounting and financial effects must be unraveled.⁴

⁴ See AICPA SBAS #5 paragraph 44 and #60 paragraph 40.

The cedent must use an authorized reinsurer to get credit for the reserves taken down. If it is using an unauthorized reinsurer, that reinsurer should post a letter of credit on the cedent's behalf or place assets equal to the transfer liability in escrow.

ACTUARIAL ASPECTS

In order to accelerate the greatest amount of investment income and place it in the underwriting account, "long tail" business (from a payment profile perspective) is required. If a company has little long tail business to cede, it cannot gain much financially from loss portfolio transfer reinsurance. Lines generally considered to give maximum effect are medical malpractice, workers' compensation, and products liability or other liability.

Basic actuarial loss data is required for a quantitative analysis leading to a responsible reinsurance offer. Payment and reported loss development triangles for the subject business are essential. In this author's experience, all too often data is not supplied with sufficient detail for scrutiny.

Large loss "outliers" and under represented losses must be normalized. Large losses may be over represented or under represented. These may also have loss development characteristics camouflaging the underlying loss process. Certain hazards may have produced too few losses to date. The actuary must use intuition and observed or postulated continuous size of loss distributions to adjust history so projections are accurate.

Allocated loss adjustment expense reserves are analyzed and included where necessary. Unallocated loss adjustment expense reserves may be analyzed and included as well (but in practice this is seldom done). Certain annual statement schedule P expense data may prove useful if both allocated and unallocated loss adjustment expense reserves are to be included in the portfolio transfer.

This author knows of no completely stochastic process in viewing potential outcomes regarding ultimate loss and payment profiles. Many reinsurance actuaries look at "best case-expected case-worst case" scenarios in determining outgoing cash flow. The various present values of those outgoing cash flows are calculated.

It is likely that in costing coverage reinsurers will attempt to match bond maturities with expected cash requirements. Unlike the single reinsured policy where loss payments are totally unpredictable, the loss portfolio has expected cash outflows. Coupons and maturing bonds can be matched to expected cash requirements. Bonds lock in specific returns (as opposed to many other investment vehicles). The reinsurer's management specifies the quality and type of

securities acceptable in loss portfolio transfer reinsurance arrangements. Depending on secured rates of return and the reinsurer's tax position, a variety of corporate and government bonds with taxable and tax exempt status are available for a dedicated portfolio. Reinvestment risks on coupons can be of staggering importance.⁵ Currently, there are a variety of "felines" on the market to eliminate this risk. For example, Merrill-Lynch has TIGR, or Treasury Investment Growth Receipts, which repackages T-Bonds to act like zero coupon bonds. Other felines include CATS and LIONS. Felines offer somewhat lower yields than non-stripped bonds as investment houses require a hedge on reinvestment.

TAX ASPECTS

The reinsurer's tax position is critical in the choice of taxable or tax exempt bond purchases and the resulting present value (market value) cost of the bond portfolio. Insurers are taxed like other corporations except as noted in Parts 2 and 3 subchapter L of the Internal Revenue Code. They use a modified accrual accounting system and have two classes of income: underwriting and investment. If the reinsurer or its consolidating parent has taxable income, the underwriting loss it will assume will effectively shield federal income taxes and a higher rate than tax exempt interest *may* be credited in the pricing. If the reinsurer has no taxable income and expects none in the foreseeable future, then marginal expected results suggest taxable bonds are most advantageous as an investment vehicle.

My understanding is that an over-structured transaction may be viewed by the IRS as, in essence, a single premium immediate annuity purchase. In that event, the ceding company would include in taxable income a portion of each payment recovered from the reinsurer. Over structuring may be hazardous.

The most competitive quotes combine high risk-adjusted yields with low reinsurer margin. Since bond yields vary day to day, today's quoted consideration must expire quickly and be subject to requotation. Changes in interest rates have a leveraged effect on cost.

The following exhibit demonstrates the effect tax position has on a reinsurer's net present value calculation. Suppose, for simplicity, that a portfolio consists of two \$1,000 liabilities to be paid in 12 and 24 months. The reinsurer can purchase taxable bonds with 7% coupons semi-annually or tax exempt bonds with 5% coupons payable semi-annually. Tax exempts may prove preferable if the reinsurer is in a taxable position.

⁵ Ronald Ferguson, "Duration," *PCAS LXX*, 1983, pp. 265-288.

ILLUSTRATION OF EFFECT OF REINSURER TAX POSITION

Loss portfolio transfer date 1/1/85

\$1,000 loss payment expected 1/1/86

\$1,000 loss payment expected 1/1/87

#1 Taxable Bonds—7% per coupon semi-annually (including reinvestment).

Present Value* = \$1,000 $(a_{\overline{2}|0.07}/s_{\overline{2}|0.07})$ = \$1,636.33

	1985		1986	
	Underwriting Income	Investment Income	Underwriting Income	Investment Income
Net Premium Earned	\$1,636.33		\$0.00	
Incurred Loss	2,000.00		0.00	
Result	\$ (363.67)	\$237.10	\$0.00	\$126.57
Carry forward to 1986		\$ (126.57)		\$126.57

#2 Tax Exempt Bonds—5% per coupon semi-annually (including reinvestments).

Present Value* = \$1,000 $(a_{\overline{2}|0.05}/s_{\overline{2}|0.05})$ = \$1,729.73** (before tax effect)

	1985		1986	
	Underwriting Income	Investment Income	Underwriting Income	Investment Income
Net Premium Earned	\$1,565.20		\$0.00	
Incurred Loss	2,000.00		0.00	
Result	\$ (434.80)	\$160.43	\$0.00	\$74.37
Recouped Taxes (46%)	\$ 200.00			
Net	\$ (234.80)	\$160.43		\$74.37

Depending on the reinsurer's tax position, the net present value is between \$1,565.20 and \$1,636.33. Reinsurer expenses and profit/risk charge have not been included in Net P.E. (premium earned).

*This standard actuarial notation represents the present value of 2 annual \$1,000 payments when interest is credited on a semi-annual basis at 7% and 5%.

**Net Premium Earned + Recouped Taxes/1.05² = \$1,729.73

Also, .46 (2,000 - Net Premium Earned) = Recouped Taxes.

Solving the equations: Net Premium Earned = \$1,565.20 (after tax).

The challenge facing the pricing actuary is to meet the financial objectives of the cedent while at the same time offering a risk product which has the expectation of reinsurer profit. This is frequently difficult since potential payment profiles, possible runoff liabilities, and unanticipated "shock" disturbances play havoc. The following scenarios demonstrate the effect payment profile and quality of carried reserves have on the present value (at 10%) of potential outcomes.

Scenario (A) describes the present value of the complete 4 and 7 year possible payouts of possible runoff liabilities. Cessions under scenario (A) have large cash flow consequences. With slightly less benefit (reserve less present value), the portfolio ceded may be structured more effectively in scenarios (B) and (C).

Also notice that, if the cedent believes the likely outcome to be 2a and the reinsurer believes the likely outcome to be 3b, a deal may be struck. They may agree to cede/accept company paid losses after 24 months but with an overall limitation in recoveries of \$3.5 million. This cedent releases \$3.4 million of carried reserves. The reinsurer's net present value is $\$2.0 \text{ million}/1.10^3 + \$1.5 \text{ million}/1.10^4$ or \$2,527,150. If the reinsurer prices this at \$2.7 million the cedent will generate \$700,000 of income.

ACCOUNTING ASPECTS

At this point, there is no standard accounting treatment for these transactions. The simplest accounting treatment, however, from the cedent's perspective is to note, following the last example, that \$3.4 million of loss reserves is offset by a negative \$3.4 million reinsurance recoverable. Further, \$2.7 million of paid losses are registered and the gain flows through the balance sheet, income statement, and schedule O or P (as appropriate). This accounting treatment can be called the "loss method".

There is also a "premium method." The treatment calls for premium reduction of \$2.7 million. Paid losses remain unchanged. Reserves are reduced by \$3.4 million. Implied by this treatment, the cedent's loss ratio goes down and his expense ratio goes up. If the reinsurer offers a 10% commission (\$300,000), ceded premium goes up by \$300,000 and the net loss ratio increases. But the

EFFECT OF LOSS AND PAYMENT CHARACTERISTICS IN VARIOUS LOSS
PORTFOLIO SCENARIOS

Loss Portfolios
(in 000's)

	Current O/S plus IBNR	Payment Profile (in months)						
		+ 12	+ 24	+ 36	+ 48	+ 60	+ 72	+ 84
1. Optimistic	\$6,000							
a. Fast pay		2,000	1,500	1,500	1,000			
b. Slow pay		1,500	1,500	1,000	1,000	500	300	200
2. Expected	\$8,000							
a. Fast pay		2,600	2,000	2,000	1,400			
b. Slow pay		2,000	2,000	1,300	1,300	700	400	300
3. Pessimistic	\$12,000							
a. Fast pay		4,000	3,000	3,000	2,000			
b. Slow pay		3,000	3,000	2,000	2,000	1,000	600	400

Present or Current values at 10% interest
Payments in 12 month increments

	<u>Scenario (A)</u> <u>Entire Portfolio</u>	<u>Scenario (B)</u> <u>Over 24 Months</u>	<u>Scenario (C)</u> <u>Over \$5,000,000 Retained</u>
1a.	\$4,867,837	\$1,809,986	\$ 683,013
1b.	4,620,069	2,016,763	582,434
2a.	6,475,377	2,458,848	2,158,323
2b.	6,150,083	2,679,009	1,927,694
3a.	9,735,674	3,619,971	5,272,864
3b.	9,240,137	4,033,525	4,859,972

commission will offset insurer operating expenses and, therefore, the expense ratio will decline. To illustrate (statutory accounting):

Ceding Company Marginal Effects	Loss Method	Premium Method	
		No Commission	Commission
Earned Premium (+)	\$ 0	\$ 2,700,000	\$ -3,000,000
Operating Expenses (-)	\$ 0	\$ 0	\$ -300,000
Paid Losses (-)	\$ 2,700,000	\$ 0	\$ 0
Change in O/S Losses (-)	\$ -3,400,000	\$ -3,400,000	\$ -3,400,000
Underwriting Gain	\$ 700,000	\$ 700,000	\$ 700,000

The reinsurer could mirror these accounting entries by merely changing signs and penalizing surplus. As yet it is not necessary, but regulators, auditors, etc. and advise it.

As an aside, for GAAP accounting purposes, the reinsurer might book the present value (\$2.7 million) of expected payments to escape this "surplus hit". He could do this if he normally discounts for GAAP purposes, and he makes adequate disclosure. The same is not true for statutory accounting purposes. Full reserves must be established, otherwise general interrogatories 16 and 28 of the convention blank must be answered so as to invite criticism.

"Another (reinsurer) statutory alternative is to consider the transaction as other income as opposed to underwriting income. A rationale here is that the investment income to be earned to offset future loss payments does not flow through underwriting income either, and the effect of the transactions still impacts statutory results. This treatment has not received broad acceptance."⁶

There are other considerations to be made in the pricing of loss portfolios. Some are contractual. Others deal with reinsurer margin requirements.

CONTRACTUAL ASPECTS

Extra contractual obligations (ECO) can be defined as punitive and/or compensatory damages assessed against an insurer as a consequence of his tortious acts. ECO's do not fall under the auspices of the original subject insurance

⁶ Taken from a speech by Mr. James Faber at the American Academy of Actuaries Loss Reserve Seminar, 1983.

policy. Historic data is not generally available nor projectable so ceding payments from this hazard should be excluded.

The reinsurer will also insist on some verbal, if not written, understanding on the use of structured settlements. The commutation of a claim by the purchase of a life annuity changes both the expected liability transfer amount and the payment timing. Special treatment is required such as substituting an actuarial equivalent payment stream for the commuted value.

The insurance industry now faces more "common cause" losses than ever before. These are the "asbestos type", unpredictable from one exposure over time. But when they occur, they create a flood of individual claimants demanding tremendous aggregate sums of money. For certain classes of insurance, the reinsurer will consider the likelihood of common cause events, charge for it, limit it in some way contractually, or both.

Claims handling is also important. Loss portfolio transfers are frequently sought by self-insureds wishing to extricate themselves from their developing insurance experience or are being acquired and, therefore, in need of a fully insured program. It is difficult to properly run off liabilities without continuity in claims handling.

A front company may be necessary to issue a primary insurance policy which is then reinsured.

EXPENSE/PROFIT ASPECTS

Having considered all of the above, the reinsurer now must decide how much to charge in excess of the bond portfolio cost. The reinsurer will have expenses, both current in the marketing and initial set up of administration, as well as on going administrative costs. In addition, it will desire a profit and risk charge dependent on the following:

1. Predictability of results—Investment risk and underwriting risk can be significant. Actual runoff could be heavier and/or faster than expected. To the extent a structure of reimbursements exists as to timing and amount, this lessens risk.
2. The surplus rent—The reinsurer's charge against surplus will restrict its writings for potentially 5–30 years. This requires substantial profit loading. It can be measured as a percentage of the first year charge against surplus, or the present value of the annual charges.

3. The contractual risk—Structured settlements, common cause losses, and claims handling features have some bearing on the value the reinsurer places on the proposed transaction. Other features such as a contingent commission or an experience rating scheme will cause the reinsurer to change profit and risk charge expectations.

FUTURE EXPECTATIONS

It should be evident loss portfolios involve more than "shelf technology." Only the educated professional can and will be successful. But what does the future hold?

The ultimate destiny of loss portfolio transfer reinsurance may be in the hands of the taxing authorities and accountants.

The AICPA is studying the issue of loss reserve discounting. It sees four types of claims:

1. Short term claims closing in one or at most two years. Discounting may not be economically justified here.
2. Long term uncertain claims like medical malpractice and auto bodily injury having reserves which earn investment income but are not subject to rigorous loss payment schedule. It is possibly impractical to discount here since conservative interest rates are indicated.
3. Long term reasonably certain claims like periodic medical payments for life under worker's compensation pension cases.
4. Long term claims with fixed payment like some workers' compensation fixed periodic indemnity for life claims. These annuities or near annuities are subject to accurate discounting procedures.

Discounting has some negative connotations including the publication of unstable and potentially unreadable insurer results. These could confuse regulators, analysts, and the public. Loss reserve evaluations and tests would prove difficult. Some actuaries observe that in recent years, reserve shortfalls are generally offset by investment earnings. As the crutch is removed, the lame patient must fall. The pressure on companies to set adequate reserves would intensify if the investment crutch were removed.

To more closely monitor the financial effects of loss portfolio transfers, many states are requiring disclosure. The NAIC is adopting a disclosure note to first appear on the 1984 Blank. The SEC is also concerned about the ability

of investors to evaluate the financial condition and results of companies with P/C operations.⁷

Finally, the government has a large stake in the loss reserve discounting arena. There are current attempts to restructure life and health and property-casualty insurance company taxation regulations in order to generate substantially greater tax revenues. It is quite conceivable that the 1983 proposal to discount liabilities for schedule P lines at a 5% rate of interest could be eventually adopted. This would generate taxable income. Accountants would likely endorse this, I believe.

Some companies discount loss reserves on a GAAP basis already (but these are largely offshore companies). If the definition of taxable income changes to embrace discounted loss reserves, can a change in statutory accounting principles be far behind? The market for loss portfolio financial reinsurance would largely evaporate. There are some very unhealthy implications currently under investigation and discussion. Until the final outcome is known, loss portfolio transfer reinsurance will continue to be a valuable tool for insurance and self-insured company managements.

⁷ See "SEC Seek Loss-Reserve Disclosure Rule To Assist Investors in Property Insurers," *The Wall Street Journal*, March 12, 1984, p. 10.