



Finite Reinsurance Where's the Risk?

CAS Ratemaking Seminar (REI-3)
March 11, 2004

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Finite Risk Questions

- What is required to meet the risk transfer test?
- Why have accountants become more concerned about finite reinsurance and risk transfer?
- Can a company be forced to re-state its financial statements if a reinsurance contract fails to meet the auditor's risk transfer test?
- Can't the accountant's actuaries come up with an analysis to show risk transfer?
- Why would the reinsurer have to lose more than 10%?

Finite Risk Questions

- What is the probability that the reinsurer will lose under the contract?
- How much can the reinsurer lose under the contract?
- Does the reinsurer have funds to invest until claims are paid?
- Does the contract have provisions for additional premiums or return of premiums?

Key Features to be considered

Premiums:

- Deposit or provisional
- Additional or return
- Minimum or maximum

Payment of reinsured losses:

- Fixed or scheduled vs. as primary losses are paid
- Limited time & distance
- Per loss or aggregate limits

Type of coverage:

- Cat exposed
- Predictability of losses and payout pattern

Risk Transfer Analysis

- **Risk transfer audit** - Company needs to show its auditor that the reinsurance contract meets risk transfer.
- **Preparation of risk transfer analysis** - The auditor should not prepare the risk transfer analysis for the Company, but may perform their own analysis to review the Company's analysis.
- **Probability estimates** - The Company (or an independent actuary) should prepare an analysis of the contract estimating the probabilities of various loss amounts to the reinsurer.
- **Cat exposures** - For cat exposed coverage (very low probability of reinsured loss), the max reinsured losses vs. the max reinsurance premium, including reinstatements, should be provided.

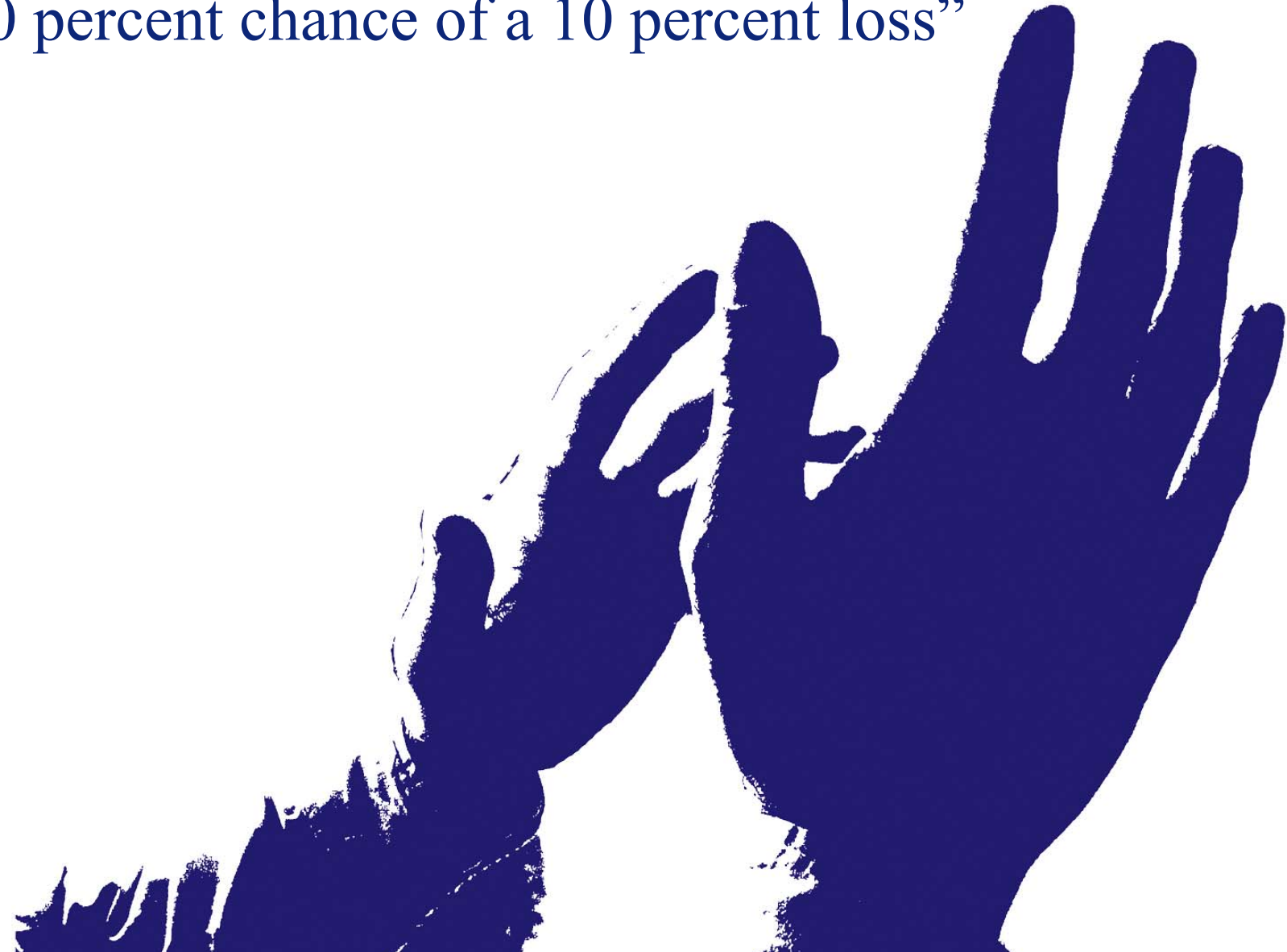
Risk Transfer Analysis – Present Value

- **Risk transfer analysis** - should show the present values of the reinsurance premiums and losses.
- **“Risk free” interest rate** - for the present value analysis can be treasury rate that is reflective of time between premium receipts and loss payments.
- **Interest rate** - same rate should be used for all scenarios.
- **Yield curve** - use may not be acceptable.

Risk Transfer Analysis - Probabilities

- **Company's past experience** - use to the extent that it is relevant to future losses covered by the reinsurance contract.
- **Other sources for estimating loss probabilities** - select carefully for relevance to the Company and the specific business reinsured.
- **Reinsurer's internal expenses and brokerage** - do not include in computing the loss to the Reinsurer.
- **Faster than expected payment of reinsured loss** - include in scenarios or stochastic modeling.

“Many auditors will no longer accept the 10/10 rule
– a 10 percent chance of a 10 percent loss”



"10/10" "Rule"

- 10% probability of a 10% loss (loss + ceding comm > 110% prem)
- Initially thought to be a safe harbor
- Still used as one method to test for risk transfer
- No longer the only or primary test
- Probability estimate must be audited
- Estimates must be audited
 - losses + ceding comm to reinsurer excess of 110% premium
 - expected profit/loss to reinsurer
 - maximum loss to reinsurer

Risk Transfer - Audit Considerations

Calculation of loss to reinsurer

- Present value of ceded prem, including add'l prem
- Present value of ceded losses
- Interest rate and ceded loss payout assumptions
- Not normally a factor:
 - Profit or sliding scale commissions
 - Brokerage
 - Reinsurer's internal expense or Reinsurer's margin
 - Experience account
 - Credit risk of reinsurers

Risk Transfer - Audit Considerations

Calculation of loss to reinsurer

- Reinsurer Profit/Loss (Funds on Deposit)
 - = PV ceded prem + PV interest credits on Funds on Deposit
 - PV ceded loss – PV ceding commission

- Reinsurer Profit/Loss (Funds Withheld)
 - = PV ceded loss in excess of Fund Balance
 - PV ceding commission

Complicating Factors

- **Catastrophe Exposure**

- Probabilities $\ll 10\%$
- Potential Ceded Loss \gg Ceded Premium
- Realistic potential for large ceded losses

- **Reinsurance Contract with Coverage Sections**

- Risk transfer is okay for some sections
- Risk transfer may be questionable for other sections
- Risk transfer is considered for contract in total (all sections)

- **Loss Corridors**

- Typically a red flag - risk transfer is questioned

Probability Estimates

- Need a credible basis from historical experience
- Experience should clearly represent subject business
- Experience should be adjusted for inflation, rate changes, etc.
- Use of past experience should reflect future experience
- Use of “industry” experience should be limited
- Reinsurer’s or broker’s analysis insufficient for ceding company
- Use of probability models for aggregate losses
 - Type of distribution justified by loss experience
 - Parameters derived from loss experience

Implications

- **Audit Concerns**

- Company analysis supporting accounting treatment
- Disclosure of reinsurance with potential risk transfer issues
- Last minute information regarding reinsurance contracts
- Users of company financial statements

- **Difference of Opinion**

- Regulatory authorities not anxious to rule on accounting
- Accounting guidance on risk transfer not likely to be further defined

- **Advance Planning**

- Involve auditors in reviewing proposed reinsurance contracts

Design of Finite Reinsurance Contracts

- **Quota share:** ok if only straight % of all ceded business
 - No limits per occurrence or aggregate limits
 - No loss sensitive ceding commission or prem adjustments
 - Not really finite reinsurance
- **Any loss sensitive features** in quota share or facultative
 - Need risk transfer analysis
- **Excess of Loss:** generally ok
 - Aggregate limits >> ceded premium

Design of Finite Reinsurance Contracts

- Put more insurance risk into the cover
- Require risk transfer analysis (recommended formula)
- Avoid extensive limiting of coverage (sublimits)
- Avoid low aggregate limits
- Include 20-50% reinsurer participation in loss corridors

Example of Risk Transfer Analysis

Expected Loss Ratio Assumption	Loss Payment Pattern	Discount Rate	Probability of 10% Loss to Reinsurer (simulation)
63%	Fixed	Single Rate	8.2%
63%	Fixed	Yield Curve	8.0%
63%	Stochastic	Single Rate	7.9%
63%	Stochastic	Yield Curve	7.6%
66%	Fixed	Single Rate	11.4%
66%	Fixed	Yield Curve	11.1%
66%	Stochastic	Single Rate	11.1%
66%	Stochastic	Yield Curve	10.7%
69%	Fixed	Single Rate	14.6%
69%	Fixed	Yield Curve	14.3%
69%	Stochastic	Single Rate	14.4%
69%	Stochastic	Yield Curve	13.8%

Example of Risk Transfer Analysis

Simulation Results - 66.0% Expected Loss Ratio

Simulated Loss Ratio	Discounted Net Cash Flow for Reinsurer	Simulation Rank	Number of Simulations	Excedence Probability
254.7%	-14.8%	1	5,000	0.02%
119.3%	-13.8%	50	5,000	1.0%
98.9%	-13.0%	250	5,000	5.0%
89.7%	-11.6%	500	5,000	10.0%
87.9%	-10.0%	570	5,000	11.4%