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THE COST OF MIXING REINSURANCE

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Most insurers have complex reinsurance arrangements. Ron Wiser's paper examines the effect of mixing proportional facultative placements with excess of loss treaties. This discussion will review the mixing problem from the treaty reinsurer's perspective. It will be shown that the mixing of facultative and treaty is a specific example of a more general problem underlying all treaty reinsurance. Potential pitfalls in the author's proposals will be discussed and alternative suggestions presented.

We often see excess of loss protection of proportional treaties where the excess treaty is applied before the proportional treaty. Facultative transactions, whether excess or proportional, usually inure to the benefit of treaties and therefore are applied first. The order of application results in the mixing problem that, if unanticipated, can undermine an otherwise well planned reinsurance program.

The main thesis of the paper is well illustrated by specific examples, intuitive argument and mathematical proofs. The underwriter who places proportional facultative reinsurance without regard to the effect of any applicable excess protection will be unpleasantly surprised by the effect the placement will have on the net position. Any placement of proportional reinsurance that inures to the benefit of any existing excess treaty will penalize net results. This follows from the general principle that any action taken by the ceding company that reduces the exposure to the excess treaty by a greater proportion than it reduces premium ceded to the treaty will adversely affect net results. Given the shape of the common size of loss distributions, the effect can be considerable.

The reader must be careful not to conclude that proportional facultative reinsurance should never be considered when an excess of loss treaty is in place. The paper states ". . . the net position after mixed reinsurance will always be worse than under a pure excess reinsurance . . ." An illustrative example and a proof are offered. If we examine the structure of the example, the nature of the results becomes clearer.

The price of an excess of loss treaty is usually determined before the subject business is written and any facultative protection is placed. As the example is constructed, the excess treaty price is fixed and the decision to place proportional facultative reinsurance is variable. The implication is that the excess of loss treaty is priced without any consideration of the benefit of inuring reinsurance. In this case, it follows that the excess treaty is overpriced and net results will suffer. But, as the author points out in his conclusion, excess of loss reinsurance treaties are priced anticipating a certain part of the book will be ceded proportionally before the treaty applies. This is an essential part of treaty negotiations.

If an appropriate credit is applied in the treaty pricing, then the aggregate net position after mixed reinsurance will be no different than under a pure excess situation. It is important to include the phrase "aggregate net position," because the excess treaty is priced to be appropriate for the sum of all subject policies. The excess treaty rate will only coincidentally be appropriate for any individual policy.

The example very effectively demonstrates that treaty pricing should reflect anticipated inuring proportional cessions. This is a point well worth making. It is just as important to emphasize that this is not an appropriate model for individual risk underwriting. There are shortcomings to using this procedure to analyze the marginal effect on results of writing a particular primary policy. Treaty pricing is an aggregate concept and it is inappropriate to include its effects in underwriting individual primary risks.

In opposition to the chronological order of placement, it might be more appropriate to treat proportional facultative placements as fixed and the treaty price as variable. Due to practical considerations, the treaty is placed first. However, the anticipated effect of facultative placements is reflected in the treaty rate and should be considered a prerequisite for treaty placement. Once a treaty is in place it seems inappropriate to change company policy on inuring facultative reinsurance.

The procedure used in the paper allows for the decision on whether to place facultative reinsurance without regard for the long term effects on the treaty. Extensive implementation of this type of analysis could lead to a change in the practice of purchasing facultative protection. Treaty reinsurers would then rightfully charge the cedant with selecting against the treaty. This would surely lead to a breakdown in the relationship required for an effective treaty.

Generalization of the Mixing Problem

The particular mixing situation examined in the paper is one aspect of a more general problem existing in all excess treaty reinsurance. A group of risks are reinsured under one agreement, often with one rate. There are obvious expense benefits to treaty reinsurance over facultative. The cost for these expense savings is a decrease in pricing accuracy.

Determining a single rate for a treaty is difficult because the risks reinsured may vary by line of business, state, classification, policy limit, deductible, inuring facultative reinsurance, etc. It is made even more difficult by the changes in distribution from year to year. The mixing of proportional reinsurance placements is one of many possible distribution changes that must be anticipated to properly price a treaty.

If we look at the treaty rate as a weighted average of correct rates for each anticipated exposure, we can see why it is inappropriate to apply an overall treaty rate to an underwriting analysis of an individual risk. To do so would lead us to write only the most hazardous risks due to the favorable treaty rate for their exposure.

If, as suggested earlier, the example was constructed assuming a fixed distribution of business ceded to the treaty, the results would be consistent with our expectations. It is unanticipated distribution changes in the subject business that affect the adequacy of the treaty rate and, therefore, the net position.

In the example in the paper, no credit was given in the excess treaty rate for proportional facultative placements. Reducing the exposure to the treaty through use of inuring facultative reinsurance benefits the treaty and penalizes net results. This is an unanticipated change in the distribution of the subject business that benefits reinsurers.

It is easy to present an alternative example in which exposure to the treaty is greater than originally anticipated and net results benefit. Assume the cedant's subject book of business is comprised of two lines. The low hazard line has an anticipated subject premium of $30 million. The high hazard line has $45 million in anticipated subject premium. It is determined that the exposure for each line requires a rate of 1% for the low hazard line and 50% for the high hazard line. A weighted average determines an overall rate of 30.4% and a reinsurance premium of $22.8 million. If the actual distribution of business at year end is $25 million in low hazard subject premium and $50 million in high hazard subject premium, the exposure rate is 33.67% producing $25.3 million in required reinsurance premium. The actual premium is $2.5 million less. This may seem an extreme example, but it closely parallels an actual treaty in place during 1985. In practice, changes in distribution can be much greater than shown in this example.

The author is admittedly presenting the ceding company's point of view. His paper focuses on one example that has detrimental effects on the cedant. The reinsurer may be more inclined to believe that, due to the much greater control of the business exercised by the ceding company, distribution changes to the detriment of reinsurers are more prevalent. Whether or not either view reflects reality, the opportunity to abuse a treaty is always present. It is essential to the continuity of a good reinsurance relationship that every effort be made to avoid such a possibility.

In order to minimize the negative effect of distribution changes, both parties must strive to develop an understanding of the book of business and the purpose of treaty reinsurance. Assumptions that underlie treaty pricing must be conveyed from management to individual underwriters and effectively implemented.

In contrast to one of the paper's contentions, it is imperative that the underwriter and actuary involved with pricing individual risks be concerned only with producing rates geared to a profitable direct premium. The effect of ceded reinsurance on net results is the domain of the ceded reinsurance manager, and actuarial involvement should address proper pricing for the aggregate exposure. The direct pricing process should take place without recognition of the treaty but within management guidelines. These guidelines should reflect the understandings that were reached with reinsurers and upon which the rate is based. In this way both parties' concerns are addressed. The cedant is satisfied that the rate reflects any exposure-reducing actions on its part. The reinsurer is satisfied that the danger of selecting against the treaty is reduced.

Conclusion

Proportional facultative reinsurance can have a considerable effect on the exposure ceded to an excess of loss treaty. In order to insure a fair price on an excess treaty, it is necessary to reduce the rate in recognition of anticipated facultative placements. However, incorporating net considerations into the direct pricing system is inappropriate and likely to lead to abuse of the treaty. These issues should be dealt with at the management level to insure compliance with the intent of the treaty.

In practice, we are likely to find that many companies do not effectively communicate the essentials of the treaty agreement to the primary underwriters responsible for individual accounts. Insurers and reinsurers will undoubtedly endorse the author's call for an improvement to this vital link as necessary to maintain stable reinsurance relationships.

I commend Ron Wiser on a very well organized and understandable paper on a difficult subject. It presents many insightful ideas and should stimulate more actuaries to examine the complexities of the many different reinsurance arrangements found in most companies.