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A Primer on Reinsurance Pricing Strategy
"A Checklist for Optimizing Reinsurance Negotiation"

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Editor's Note: *The following article is part one of a two-part series regarding reinsurance quote negotiation.*

This article is written with the idea that both the reinsurer and the direct writer could each benefit from fully exploring all appropriate assumptions and considerations directly and indirectly impacting reinsurance pricing. This article addresses such assumptions and considerations based on my experience on the direct writer side of the negotiation. The reinsurer benefits by being able to offer the lowest YRT rates and the most competitive pricing that it can justify, enabling it to win a share in the pool. The direct writer benefits by giving the reinsurer the additional insights and justification for a lower priced quote, thus reducing their reinsurance premiums and increasing bottom line net income. This "negotiation process" should be looked at as more of a useful educational process. With less information the reinsurers will tend to be more conservative in their pricing. Conversely with more information the reinsurer can use a sharper pen. The more knowledge and insights the reinsurer has about the direct writer's business that may impact current mortality and future mortality patterns, the greater the likelihood that its quote will be more competitive.

Obtaining reinsurance quotes may be a simple matter, but the selection of which reinsurers to participate in the bidding, and the negotiation process that follows, calls for special insights. Product actuaries know that there is often a big disparity in the reinsurance quotes obtained from reinsurers competing for business. It is beneficial to understand the underlying reasons for big disparities in reinsurer pricing. It is helpful to recognize each reinsurer's methodology and assumptions that are driving its pricing. In most of what follows we assume that the direct writer wants a first dollar quota share YRT reinsurance arrangement, but the same concepts are applicable to coinsurance as well.

Below I outline some of the most important assumptions and associated considerations that impact reinsurance pricing. These items are offered as a checklist for careful joint review by the reinsurer and the direct writer.

Assumption A. Choice of Mortality Table

Probably the most important assumption (and certainly the one with the largest financial impact) made in reinsurance pricing is the mortality table believed to have the appropriate slope for the client company's mortality. Reinsurers place the slope consideration at the top of their list as the paramount feature justifying painstaking research as part of the reinsurance pricing negotiation process. Reinsurers nowadays use either the 1975–80 select/ultimate table or the 1990–95 select/ultimate table (2001 VBT) as the basis of their reinsurance rates, often based on the request of the ceding company. The former table models relatively flat durational mortality progression while the latter exhibits the opposite. Mortality rates in this more modern table exhibit marked and steep progression after issue. Once the issue of table suitability has been addressed, the chosen standard mortality table should be fine-tuned to reflect anticipated experience by developing scaling factors to initially assure a perfect fit. The working mortality table to be assumed for pricing purposes will reflect best estimates of the slope of future mortality experience. It may transpire that the table finally adopted is a hybrid table of intermediate slope exhibiting features of more than one standard table.

Considerations in Choosing a Mortality Table with Appropriate Slope

1. Underwriting Rules/Guidelines/Practices

Variations in underwriting rules, guidelines and practices obviously impact future mortality patterns. While underwriting guidelines vary from company to company, the degree to which the underwriters adhere to the guidelines (i.e., the frequency of underwriting exceptions) must certainly be recognized. Special underwriting programs such as table shaving, special credits, etc., must be properly defined and disclosed and can affect the overall slope.

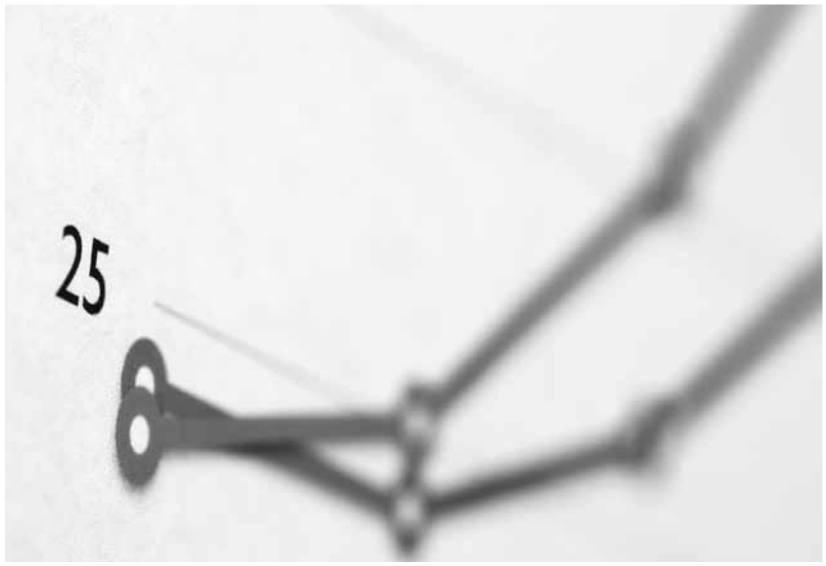
Generally, tighter underwriting requirements and stricter adherence to the underwriting rules and guidelines will produce lower mortality rates on the outset and sharper increments in duration-specific slope.

2. Average Size of Policy (Face Amount)
The average face amount per life insured plays a dramatic role in the overall underwriting screening process. For example, two companies may have identical stringent underwriting guidelines, yet one company (company A) operates in a market where face amounts in excess of $500,000 are the norm while another company (company B) may be issuing policies with face amounts averaging $100,000. Thus, the actual underwriting requirements being obtained by company B would be very limited relative to company A, giving rise to relatively weak selection and an expectation of higher mortality rates with a flatter durational slope.

3. Distribution System
The distribution system of the ceding company or for a particular product can have a significant impact on the degree of potential anti-selection. Anti-selection will likely impact the mortality level and durational slope. Brokers writing for multiple companies could seek out deficiencies in companies' product designs, underwriting or pricing and exploit these to the detriment of the direct writer and its reinsurers. Career agents writing for only one company can produce business with less potential anti-selection.

4. Market Segment (Upscale, Middle America, etc.)
It is that each market segment will exhibit its own variation in mortality patterns resulting from social, economic and cultural differences. Companies underwriting middle market risks with lower average face amounts are likely to experience higher mortality rates, and flatter durational slope.

5. Average issue age distribution
A younger average issue age distribution linked with a low average face amount per life will generally have less stringent underwriting requirements and likely flatter durational slope.



6. Other important Points
It should be noted that studies have shown that the impact of choosing one mortality table or another in projecting the present value of future mortality can produce a swing of up to 20 percent or more in reinsurance YRT rates and hence turn a competitive quote into an uncompetitive one. This impact varies by issue age and gender distribution. For additional information see the author's article "The Relationship of Mortality Projections and the Underlying Mortality Tables Used," in the August 2002 issue of *Product Matters!*

It is therefore of utmost importance that the direct company identify and explain all possible characteristics and aspects of the business including those shown above in Assumption "A" (Choice of Mortality Table) to each quoting reinsurer would tend to justify an assumption of a flatter mortality slope than the 1990–95 (2001 VBT) select/ultimate table. If a reinsurance quote was expressed as a percentage of the 1975–80 select/ultimate table, be sure to understand the underlying slope implications. The reinsurer may have done their pricing on a steeper scale and then quoted the actuarial equivalence in terms of the 1975–80 table. In that case there may still be opportunity to convince the

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reinsurer that a flatter slope is more appropriate for the business and have them improve their quote.

Techniques exist for generating a hybrid, modified or redesigned table exhibiting a flatter, fairer mortality table resulting in more competitive reinsurance pricing. These are best addressed during the negotiating process. For additional information see the author's article, "Generalized Mortality Table Analysis," in the March 2003 issue of *Reinsurance News*.

If a review of the various aspects of the business fails to find any attributes that could justify a flatter slope, consider raising the following point with the reinsurers to encourage them to assume a flatter slope than the 1990–1995 mortality table (2001 VBT).

"Another very important assumption and special consideration is the reinsurer's end-of-term pricing."

The 1990–1995 mortality table was based on intercompany mortality experience from calendar years 1990 to 1995. It is a known fact that the lapse rates for policies during this period were very high compared to current levels. Therefore one could argue that the slope of this table is artificially high due to the anti-selective lapses that occur when lapse rates are atypically high. Consequently current mortality slopes should be expected to be flatter than the 1990–1995 mortality table.

Assumption B Mortality improvement Factors

Another very important assumption is the extent that mortality improvement is factored into the pricing (i.e., the reinsurer's mortality assumption for the direct business). For example, a 1 percent annual mortality improvement factor over 20 years produces a decrease in the present value of future claims ranging from 7–10 percent depending upon issue age. As a result of the fact that reinsurers commonly build future mortality improvements into their pricing, coupled with the fact that projecting future mortality is an art as well as a science, it is not unusual to find reinsurers who will offer a YRT reinsurance premium rate scale (even after factoring in their expense and profit margins) that is lower than the ceding company's pricing mortality assumption.

The Mortality and Underwriting Survey Committee of the Society of Actuaries will soon be publishing the results of the latest (March/April 2011) survey on mortality improvement. The results of practices of direct writers and reinsurers will be published separately with a comparative analysis.

Assumption C. Reinsurer's Expense Assumptions

The reinsurer's expense methodology and assumptions (per unit, per policy, percent of premium) can have a significant effect on pricing. For example, the per unit expense that a reinsurer may assume (unless subject to a reasonable cap) could lead to unrealistically high total treaty expenses where large business volumes are involved and can lead to substantially less competitive or even uncompetitive quotes.

Assumption D End of Term Pricing

Another very important assumption and special consideration is the reinsurer's end-of-term pricing. Studies invariably confirm the severe anti-selection process occurring at the end of each level premium paying period. Severity of anti-selection varies from company to company and product to product. Many factors come into play that influence the end of term anti-selective continuation rate and the resulting deterioration in mortality experience of the term portfolio. The magnitude of the direct writer's renewal premium after the initial level term period (typically an annual renewable term premium ranging from 200–300 percent of the 2001 CSO) impacts the degree of the shock lapse rate and resulting anti-selection. The degree of mortality deterioration varies according to a number of factors such as the length of level term period, the magnitude of the renewal premium following the initial level premium term period, issue age, duration, risk class, and gender. Due to the complexity and subjectivity involved in recognizing, measuring and evaluating each of these parameters in pricing post-level term mortality, the reinsurers naturally tend to be very conservative in pricing for continuation. This can turn what would have otherwise been an attractive quote into one that is less competitive. Technical approaches based on tools such as the Dukes-McDonald Method or the Becker-Kitsos approach are valuable in determining the appropriate end of term mortality assumption and hence in judging whether the reinsurer's end of term pricing is equitable and reasonable. To overcome this problem and enhance the quote, it might be prudent of the ceding company to request each reinsurer to provide a quote predicated on the condition that at the end of the level term period, the reinsurer has the unconditional right to increase premiums and the ceding company has the unconditional right to recapture. (Whether or not the reinsurer actually increases their premium rates.)

There are several additional important considerations to recognize in reinsurance negotiations. These considerations will be addressed in part two of this series in the next issue of Product Matters! □