Insights and Commentary on the Reinsurance and Insurance Markets
from Ruark Consulting LLC and Ruark Insurance Advisors, Inc.

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Famous or Not So Famous Quote:

We build too many walls and not enough bridges.

Sir Isaac Newton

Welcome to the first issue of Ruark Reports, a newsletter providing insights and commentary on the reinsurance and insurance markets. Knowing how busy everyone is, we intend for each issue to be a quick-read that focuses on one or two topics. A brief scan will tell you whether the issue should be perused, forwarded to a colleague in another area, or simply ignored. You can expect a new issue every three to four months.

The selection for our Famous or Not So Famous Quote will not always be based on relevance but certainly was for this issue since this newsletter is a new communication bridge between you and us. While not prone to do so, Tim seems to have taken this famous quote quite literally. He tore down walls in our new office and recently taught his daughter's 5th grade class how to build a bridge. He even used their help to construct one between his house and a neighbor's across the pond.

We hope you enjoy Ruark Reports and invite you to call if you'd like to discuss any of the articles in greater depth. (See page 2 for contact information.) We also welcome suggestions for future articles.

Inger Harrington, FSA
Editor

How Neutral is an Arbitration Panel?

by Richard Tucker, FSA

The arbitration provision of a reinsurance treaty normally specifies how the panel of arbitrators will be chosen if a dispute reaches this point. The selection method is important because it has a strong influence on the initial mindset of the panel, and hence may be a strong influence on the outcome.

A typical selection method is for each of the parties to select one arbitrator. These two arbitrators then select the third member of the panel, who is often referred to as the "umpire". The two party-selected arbitrators often come into the discussions with pre-

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Insights on Modeling VA Risks

By Timothy Ruark, FSA

As a reinsurance professional, I frequently get an early look at new approaches to product design and risk management. Lately, I've witnessed some improper risk analysis and decided it would be worthwhile to provide insights on choosing assumptions and modeling techniques.

Let's start with modeling GMIB, the income benefit.

How many people will annuitize?

We all know that few people choose to annuitize, perhaps no more than 1% of annuity holders. But what assumption should be used when the annuity

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We Can Help

Since 1998, the RIA team has been providing clients with specialized annuity capabilities related to variable annuity benefits, equity indexed annuities and fixed annuities. We help design and price products, evaluate risk strategies, and develop and administer customized reinsurance solutions. We also provide actuarial valuation services including evaluation of the proposed new valuation standards.

With the creation of RCL and the growth in our actuarial staff, we now provide this same broad range of services to the life and health markets as well. Please don't hesitate to contact us to explore ways we may be able to help you in 2005.

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"pays" the owner to annuitize, which is one way to think of an in-the-money GMIB? Well, 2% annually is not the right answer, even though it is more than double the historical rate. Nonetheless, 2% was an assumption in use for one company!

Like many others, RIA has adopted a dynamic annuitization assumption that depends on account value performance and attained age. In simple terms, our formulas use low rates of annuitization when people are relatively young (under 60), even if the account value has tanked. Our position is that the annuity owner will not annuitize just because the benefit is in the money, since they lose nothing by waiting to a more typical income age. Likewise, at older ages (75+) we reduce annuitization rates because health concerns may either require immediate access to money or undermine the value of an income stream payable for life.

Although we assume that rates of annuitization are reduced at certain ages, what about rates at the key ages of 60-75? RIA assumes very heavy annuitization at these ages, if the account values have underperformed. Rates in excess of 20% of eligible contracts per year are possible.

Treaty limits on annual annuitizations must be modeled carefully.

But if the frequency of annuitization depends on age, this forces the user of the pricing model to be careful in the application of certain risk management features. For example, if a reinsurance treaty uses a 20% limit on annual annuitizations, this limit must be applied in aggregate. That is, if the pricing model uses ten age/sex cells, it would be inappropriate to apply the 20% limit to each age/sex cell. By doing so, the model might artificially limit the claims at age 65 or 70, while no limit would apply to younger or older ages. Of course, the treaty limit applies in aggregate, so it may be that no claims should be limited.

While on the subject of treaty limits, we've also seen a mistake in the evaluation of hedging strategies. As an alternative to reinsurance, hedging has

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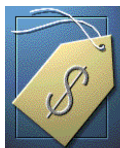
some strengths and some weaknesses. One place where hedging is on equal footing with reinsurance pertains to assumptions.

For GMIB, the insurer must make assumptions on annuitization frequency. Neither hedging nor reinsurance is likely to relieve the insurer from establishing guidelines for annuitization frequency.

Consistent assumptions are needed to evaluate hedging vs. reinsurance strategies.

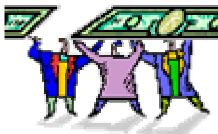
Recently, we saw a case where the insurer rejected a GMIB reinsurance treaty because it was deemed too costly. The same insurer was fairly close to adopting a hedge strategy without ever bothering to examine consistency in their assumptions. It



turns out that the reinsurance treaty that was rejected used a 20% annual limit on annuitization frequency, while the hedging program was based on an annual assumption of less than 10%! The insurer almost made a huge mistake. Naturally, the first step for the insurer is to determine what aggregate limit meets their risk tolerance (e.g. 10%, 20% or something else). The second step is to evaluate all risk management strategies using this common assumption, so they can get a fair comparison of costs and benefits.

Not all owners will take withdrawals from a GMWB.

Another recent assumption and modeling challenge pertains to GMWB. In most ways, WB is similar to other VA guarantees that are put-based. In fact, just as you assume that not all owners will die when evaluating a GMDB, or that not all owners will annuitize for a GMIB, it is certainly justified to assume that not all owners will take withdrawals from a GMWB. At RIA, we've been using an 80% factor for WB utilization, when the benefit is seriously in-the-money. The 80% factor helps us to conservatively calculate any treaty limits.



It's critical to model GMWB by cohorts.

But note that you can't apply the 80% the same way you might apply a 1% annual mortality rate or a 15% annual annuitization rate. If the normal WB withdrawal amount is 7%, then in aggregate an 80% assumption means that 5.6% of account value will be withdrawn annually. It is extremely important that the modeling assume that 80% of the inforce take the full 7% withdrawal (and the remaining 20% take nothing), as opposed to 100% of the inforce take 5.6% annually. The WB claim occurs due to the cumulative impact of withdrawals, and if the pricing model uses 'average' assumptions rather than 'assumptions by cohort', potential WB claims can be drastically understated. The inaccuracy gets more pronounced for values of utilization below 80%.

Lapse assumptions should be dynamic.

Finally, the GMWB risk analysis requires proper application of lapse assumptions, just like all VA guarantees. If the account value tanks, and the pricing model begins reflecting annual withdrawals, it is only logical that baseline lapse assumptions are abandoned. The owner's actions demonstrate that they have an understanding of the value of the WB benefit, so it is improper for the pricing model to continue on a normal lapse pattern featuring rates of 15-30% after the CDSC period and beyond. This approach will drastically understate the potential risk of the GMWB. Again, consistency in lapse assumptions is fundamental to all VA guarantees, not just WB. Whether you retain risk, reinsure, or hedge, don't adopt a strategy that depends on inconsistent assumptions; you will either be burned by higher claims than expected, or higher capital requirements right away, once your "mistake" is discovered.

Remember, RIA assumptions and modeling techniques are available on a complimentary basis to our clients. Contact Inger or myself if you would like the actual tables we use for our reinsurance models.

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conceived notions that favor the party who chose them.

With "umpire" defined as a person chosen to settle a dispute, the use of the term anticipates that the first two panelists are likely to be partial in their evaluation of the dispute.

A dispute that reaches arbitration means that less formal and less costly forms of resolution have been unsuccessful, and that the outcome is important enough to the parties to allocate the money and time that the arbitration process entails. At this point, do you want a single umpire to impose the lion's share of influence on the outcome, or would you be better served to have all of the panel members viewing the dispute in an impartial manner?

There are alternative panel selections processes that can achieve a more impartial panel. A provision that we've seen starts with each party creating a list of five potential arbitrators. Each list of five is given to the opposition, who selects one member from the list to serve on the panel.

The two selected panelists chose the third panel member from the eight candidates remaining on the two lists. Candidates who have a strong potential to be biased are unlikely to be chosen from the initial group of five, and are also unlikely to be selected as the third arbitrator. This has a moderating effect on the candidates placed on each party's list.

To ensure that candidates are qualified, they must be current or prior officers of an insurance company or reinsurance company. The treaty provision can also specify that potential panel members can not be canvassed to determine their sympathies prior to being placed on the list of candidates. Communications should be confined to a candidate's desire and ability to serve. This requires them to be told of the facts about the case, but not any predilections they may have regarding its disposition.

The arbitration provision of a treaty does not typically receive thoughtful consideration during drafting. However, a little time spent up front can have a large impact on the process followed and outcome obtained many years hence.

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