SOCIETY OF ACTUARIES

Article from:

Reinsurance Section News

August 2005 – Issue 56

WHERE DOES THE TIME GO?

by Timothy J. Ruark

Has it really been ten years since I authored the epic "Variable Annuity Guaranteed Minimum Death Benefit"—The Movie, in *Contingencies* magazine? (I don't care if you don't remember, my mom considers it an epic, and so it's an epic.) And what prophecy—so many of us have in fact vacated the offices mentioned therein: "There are two kinds of actuaries: those whose careers will end due to the GMDB, and those who'll move into their offices." And to prove timing is everything with comedy, that article was listed as "humor," but a few years later, I guess it wasn't so funny.

So, ten years later, what is new with GMDB? Well, consider that only a few people have been involved in variable annuity (VA) guarantees over the last decade, and I'm one of them. More important, they asked me to write this article. So, now the reader will tolerate my views on three aspects of GMDB—the retail product, the reinsurance players and the reinsurance techniques. By reading this article, you will be revered at actuarial cocktail parties, and I shouldn't have to tell you how important that is.

Retail Product

In general, a 2005 GMDB risk profile (i.e., what you stand to gain versus what you stand to lose) is much more favorable than the 1995 risk profile. Back then, the GMDB was the cutting edge for product developers, and great effort was made to differentiate the variable annuity through the GMDB. The time period was marked by constant incremental design changes, as companies attempted to improve upon their competitor's offerings. Usually, these GMDB changes were modest, e.g., a seven-year ratchet changing to a six-year ratchet, but given that 50 or more companies were playing this "incremental" game, over time GMDB designs became much more aggressive.

A more aggressive GMDB design for the risk taker means a more valuable GMDB design for the retail customer. But, too often the insurance industry gives away things for free, a common practice with the GMDB circa 1995. Back then, product design efforts resulted in an ever-rich GMDB being offered in the VA chassis, at little or no cost to the retail customer. Marketers claimed that it was difficult to charge for something that had no value. There were a few actuarial voices in the wilderness proclaiming the risks of GMDB. Then the stock market crashed….

Although the market crash caused pain for writers of VAs, it also changed the mindset for VA guarantees. Finally, the GMDB was recognized as a valuable benefit, and this paved the way for VA writers to charge a more reasonable fee for the coverage. More than any other reason, this is why today's GMDB risk profile is far superior to a decade earlier. There are other reasons, such as more balanced investing and tighter control of benefit options.

Today, some VA writers are even assessing the GMDB fee on the guaranteed benefit, rather than the account value. Of course, this still doesn't preclude losses, but it does ensure that the VA writer collects meaningful fee income in all scenarios, even when the account value swoons. This approach also aligns the VA writer with the reinsurance market, where players have always stressed the "catastrophic" nature of the risk, and the importance of being paid commensurate with potential losses.

Players

I don't ever remember a period where reinsurance was not available for GMDB. If this were a biblical epic, we would say that Transamerica begat Swiss Re and CIGNA Re, Swiss Re begat AXA Re and AXA Re begat ACE Tempest Life Re. (CIGNA Re must have been taken before it could begat.) But these are just some of the companies that have publicly professed interest in GMDB business. Beyond these

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names were almost all other reinsurers. These other reinsurers assumed GMDB business at one time or another, either as a concession to a client, through a retro arrangement or perhaps to test the waters.

Interesting of late, there has been an emergence of new reinsurers for GMDB, who are not shy about professing their interest in the business. Of course, this new group of reinsurers will manage their risks like an investment bank, and actually, in many cases investment banks own the reinsurers. Generally, for these companies, GMDB risk will not be assumed unless it can be hedged through the capital markets. This is quite different from reinsurance that was traditionally offered, but this new "banking" model should still be quite useful to ceding companies wishing to divest GMDB risk.

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One big challenge to the banking model is how to support new business. In the past, reinsurers provided a two or three year window within which the terms of the reinsurance treaty were set for all business sold during the window. This approach matched the interests of the VA writer, where products have to be filed with the SEC and states and where it is very difficult to gain shelf space for a product that changes frequently. By securing reinsurance terms, the VA writer could confidently market its product for a year or two without concern for the cost of managing their risk. But the capital market approach depends on derivatives, where prices change continually, and it is outside the comfort zone of bankers to have pricing commitments that extend far into the future. It is far too time consuming to get the VA writers to change their thinking toward daily pricing for annuities, so selling a treaty covering new business will always be problematic. Inforce blocks that could benefit from reinsurance are still plentiful, and besides avoiding the issue of future derivative prices, the demographics and investment allocation of inforce blocks is known.

Reinsurance Product

Compared to ten years ago, today's traditional reinsurance treaties have a great deal of risk sharing between the ceding company and reinsurer. "Tim, can't I get one of those GMDB deals that were available in 1995? The answer is no, evoking a sigh of dismay, as if no buyer could resist a 1995-style program. The truth is that most buyers did resist those programs in 1995! While the reinsurers of 1995 wrote plenty of treaties, I can attest that they lost more than they won. And though many treaties were lost to other reinsurers, even more were lost because the ceding company decided to self insure. Ultimately, most of these self insurers regretted not divesting of their risk management through reinsurance.

Time will tell whether reinsurance buyers will look back fondly and wish they could secure one of those 2005-style programs. As I noted, today's traditional treaties tend to have more risk sharing—the risk transfer in these treaties is huge. For example, a treaty could have a stop loss deductible of 15 bps, with the reinsurer effectively on the hook for all claims in excess of 15 bps. This is risk sharing, but the ceding company has secured a cap on their losses. On an expected basis, the ceding company will pay the bulk of the claims, since most scenarios will not create claims in excess of the deductible. But when you ignore expected results, the risk transfer in this arrangement is significant, since in those few scenarios where claims exceed the deductible, all the excess is transferred to the reinsurer.

Similarly, a reinsurance treaty could have an aggregate claim cap, which is a risk-sharing element. But usually, at least in the treaties my company is involved with, this claim cap is based on the worst scenarios for account value performance and mortality. In theory, actual claims could exceed the claim cap. However, even if this occurs, it only means that the reinsurer has paid claims far in excess of their premium collections.

Besides the introduction of more risk sharing, today's traditional reinsurance treaties offer better profit potential to the reinsurers, i.e., the reinsurance premium rates are materially higher than ten years ago. Back then a one-year ratchet may have had a reinsurance premium of 15 bps. Today, the

retail fee for the ratchet may be 40 bps, and the reinsurer may get 35 bps, based on the treaty's allocation of risk. With GMDB, it's natural to focus on claims, but premiums are also important and revenue per unit of risk has greatly increased over the last 10 years. As evidence, one leading GMDB reinsurer reported earnings of $26 million in the first quarter of 2005.

With regard to product lines, the companies that provide GMDB reinsurance are not very adamant about securing other forms of reinsurance. For example, if I provided GMDB to a client, why not also request life reinsurance? This is not a tie-in sale, but instead a request by the reinsurer to match the life reinsurance offers from other reinsurers. In the long run, this seems like a win-win since the reinsurer is able to diversify and grow their business, and the ceding company broadens its relationship with a reinsurer that has greater sophistication and risk management capabilities than a life-only reinsurer.

The bank model reinsurance treaty is relatively new, but given its dependence on actively traded derivatives, there are some features that one can expect:

- First, as mentioned earlier, there will be a tendency to apply the bank model to inforce blocks rather than new business.
- Second, treaty terms will be firmer for the treaty's first decade than for later years. The key building block for risk management will be SPX options on the exchange, and for now, these options are probably only useful for 10-12 years into the future. Given that the bank model requires near complete hedging, it might be unusual for the ceding company to lock in treaty terms for the life of the contracts.
- Third, risk sharing will still occur with the bank model, because the reinsurer will not want to accept risks related to lapses, asset allocation, and in some cases, mortality.
- Fourth, prices on new reinsurance blocks will move with shifts in the price for derivatives, so interest rates and option volatility become very important in managing expectations for future reinsurance premiums.
- Fifth, it will be relatively easy to secure reinsurance coverage at the extreme tail (e.g. SPX goes to zero) because these outcomes are covered by derivatives. Much like the traditional reinsurance market, there is a price for everything, and covering the theoretical tail will be more expensive.

So that's the summary of the last ten years for GMDB. Most of the best ideas for reinsurance of GMDB date back a decade, but it took ten years for some of these ideas to move forward. In the interim, companies have come and gone, offices have been vacated, and stochastic modeling is now mainstream. Actuarial work is little different from other work, in that sometimes it takes a crisis before necessary changes can be implemented. ✹

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