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Impact of VM-20 on Life Insurance Product Development

By Paul Fedchak, Jacqueline Keating, Karen Rudolph, Uri Sobel and Andrew Steenman

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Chairperson's Corner

By Kelly Rabin

Spring is the season of many professional conferences, and this year is no exception. I recently had the opportunity to attend the 2017 Life Insurance Conference in Orlando. This meeting is jointly hosted by LIMRA, LOMA, the Society of Actuaries and American Council of Life Insurers, and attracts professionals from a variety of backgrounds, not just actuaries. It is nice to get out of my day-to-day number crunching and gain a broader perspective about what is going on in our industry.

A theme across many of the sessions I attended was **disruption**. Dictionary.com says one definition of disruption is "a radical change in an industry, business strategy, etc., especially involving the introduction of a new product or service that creates a new market." Why is there so much talk about disruption when we are still, by and large, selling the same products to the same people?

- **The Internet age and Big Data**. General consensus is that it is a matter of time before Amazon, Google, etc., get into the insurance business. People are afraid these beloved brands will beat us at our own game.
- **Generational changes**. The average millennial does not want to wait 50 days to get a policy when they are used to clicking "Buy Now," not to mention needing to meet with an agent and a paramed in person.
- **Sustained low interest rate environment.** We can't afford to keep writing the same guaranteed products. How do we offer easy-to-understand products with high consumer value without putting the company at risk?

These are just a few examples of external forces that will cause disruption; I am sure you can think of many more! Let's not forget about principle-based reserves and the increasingly sophisticated modeling actuaries will be asked to do.

So what's a product actuary to do?

- As a wise man once told me, be a student of the business. Learn everything you can about what is going on in your company, other life companies and other industries altogether. Many concepts start elsewhere in the insurance industry (I'm looking at you, predictive analytics) before making their way to the life side.
- Collaborate with the non-actuarial areas of your company that are revamping processes, reaching new markets, etc. What product changes need to happen if we do things differently?
- Give yourself space for blue sky thinking. The true disruptors of our industry likely don't even exist yet. Can we disrupt ourselves instead?

While I look forward to buying life insurance from my self-driving Uber someday, for now I'll settle for being able to pay my premium online. After all, a worthy goal of innovation is to make peoples' lives better. ■

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Impact of VM-20 on Life Insurance Product Development

By Paul Fedchak, Jacqueline Keating, Karen Rudolph, Uri Sobel and Andrew Steenman

INTRODUCTION

A team of Milliman consultants was recently engaged by the Society of Actuaries to perform research on the impact of Chapter 20 of the National Association of Insurance Commissioners (NAIC) Valuation Manual (VM-20) on life insurance product development. This article highlights some key excerpts from this research. For the sake of brevity, certain details of the research have been omitted from this article. Reference the research report[1] for a complete description of our methodology.

This research summarizes changes to the product development process because of the introduction of principle-based reserves (PBR) as required under VM-20 through the development of case studies for term and universal life with secondary guarantees (ULSG) products. The products studied are hypothetical and the illustrative results are only applicable to the specific products, premiums levels and assumptions used in the case studies. While similar results may not be expected for other products using different assumptions, the case studies highlight some of the issues of pricing under VM-20. The case studies capture the impact on profitability of various changes in the pricing situation, starting with the Model 830 reserves and the 2001 Commissioners Standard Ordinary (CSO) table with no reserve financing, then reflecting the impact of financing arrangements, the introduction of the 2017 CSO table and the introduction of PBR.

HIGH-LEVEL SUMMARY OF VM-20 REQUIREMENTS

This article will use the following terms and their acronyms as defined in VM-20:

- Net premium reserve (Section 3 of VM-20): NPR
- Deterministic reserve (Section 4 of VM-20): DR
- Stochastic reserve (Section 5 of VM-20): SR

The reader should refer to the full research paper for more detail, or VM-20 for a complete description of these reserve amounts and required calculations. This section of the article provides a high-level description of these VM-20 reserve components and considers how the basis for those reserves may change after a policy is issued. Changes after issue date may impact future reserves and may be considered in pricing under a VM-20 reserve framework. Note that references made in this article to VM-20 are based on the version of VM-20 applicable at the time research was in publishing.

In pricing products under a VM-20 framework, companies will need to consider how to reflect the variability in VM-20 reserves and consider the pricing impact of potential reserve volatility. To illustrate these concepts, we have developed term and ULSG case studies. Both case studies are based on the same five pricing situations, as summarized in Figure 1.

TERM CASE STUDIES

Product Design and Model Office

The foundation for the term model office is a top quartile (as measured by today's standards) of a 10- and 20-year level premium term plan with an insurance benefit period to attained age 95. Issue ages range from 20 to 65 for the 10-year product, and from 20 to 55 for the 20-year product. There are four nonsmoker classes and two smoker classes. The product is gender-distinct. Following the level premium period, the premiums increase to 250% of the 2017 CSO age nearest birthday (ANB) Ultimate mortality rates per $1,000 on the preferred table basis. We developed the level period premiums by averaging the per unit rates of select top-quartile companies. There is a $60 policy fee. Two policy sizes are represented: $350,000 and $1,200,000.

The company is assumed to cede amounts in excess of $1 million to a third-party reinsurer through yearly renewable term (YRT) mortality risk reinsurance. Net reinsurance premiums for YRT reinsurance are $0 in the first policy year, and in renewal years are set equal to the direct writer's anticipated mortality experience, including mortality improvement, with a 10% profit charge included.

Commission rates and general insurance expenses are consistent with the top-quartile companies represented. For statutory reserves under Model 830 XXX, X-factors are developed to minimize or eliminate any deficiency reserve. There are no cash values that develop for this product. Target surplus factors representing 325% to 350% of company action level (CAL) risk-based capital (RBC) are assumed in the pricing, as well as a tax rate of 35%.

The model office assumes a distribution across the issue age range, the underwriting classes and genders. Four products are represented: Term 10 $350,000, Term 10 $1,200,000, Term 20 $350,000 and Term 20 $1,200,000. The projection horizon is equal to the level term period: 10 or 20 years.

Figure 1
Pricing Situations: Basis of Statutory and Tax Reserves

Pricing Situation	Description
1. 2001 CSO	Statutory and tax reserves are Model 830 reserves (XXX, AG38)* using the 2001 CSO table, and no financing is applied.
2. 2001 CSO AG48 Financing	Statutory reserves are Model 830 statutory reserves (XXX, AG38) using the 2001 CSO table with AG48 financing of reserves in excess of VM-20 reserves. Tax reserves are Model 830 tax reserves (XXX, AG38) using the 2001 CSO table. AG48 reserves are calculated as described below for PBR, but with the NPR component using adjustment factors specified in AG48.
3. 2017 CSO	Statutory and tax reserves are Model 830 reserves (XXX, AG38) using the 2017 CSO table, and no financing is applied.
4. 2017 CSO AG48 Financing	Statutory reserves are Model 830 statutory reserves (XXX, AG38) using the 2001 CSO table with AG48 financing of reserves in excess of VM-20 reserves. Tax reserves are Model 830 tax reserves (XXX, AG38) using the 2017 CSO table. AG48 reserves are calculated as described below for PBR.
5. 2017 CSO PBR	VM-20 statutory reserves are used based on an NPR component using the 2017 CSO table, and DR and SR following VM-20 requirements. Tax reserves are calculated as the NPR using the 2017 CSO table.

* Model 830 statutory reserves are commonly referred to as XXX for term or Actuarial Guideline 38 (AG38) for ULSG

Profitability Results

Pricing results tables are provided in Figure 2 for the high-band 10-year and 20-year level premium term to A95 products. Figure 2 summarizes the profit measures, including the internal rates of return (IRR), for the term model office over the five pricing situations described in Figure 1. Common investment portfolio rates are assumed in each pricing situation. The liability cash flows, including the premium, are unchanged between pricing situations, with the exception of the inclusion of financing costs under AG48. The changes in profitability are thus driven by the changes in reserve and surplus levels, the amount of investment income and the level of income taxes created by them.

In Pricing Situation 1, together with the experience assumptions assumed for a top-quartile product, produce IRRs in the 6% to 7% range. Pricing Situation 2 brings beneficial tax leveraging to the pricing, resulting in considerably higher IRRs. In Pricing Situation 3, the IRR metrics have increased in response to the pattern of reserves being lower overall. The financing arrangement depicted by Pricing Situation 4 helps the profitability, but does not provide as much tax benefit as under Pricing Situation 2. This is because the tax reserve, having been calculated using 2017 CSO, is a lower tax reserve than under 2001 CSO.

Pricing Situation 5 moves to full PBR implementation without financing. The PBR reserve is the same as the post-financing reserve under AG48 in Pricing Situation 4, while the profit margin metrics for Pricing Situation 5 are most like those of Pricing Situation 3. The IRRs for Pricing Situation 5 fall in between pricing situations 3 and 4.

Observations

As we stepped through the progression of pricing situations for this case study, it became clear that the earlier emergence of earnings under the redundant reserve financing arrangements, while maintaining the Model 830 XXX tax reserves, brought the profit metrics back to industry targets. On a PBR valuation platform (Pricing Situation 5), these term products demonstrate improved IRRs when compared with pricing situations 1 and 3. For competitive term products with 100% credibility that were the basis for the case studies, companies not using financing transactions may see improved profitability under PBR, but companies that previously used financing may see deteriorating profitability under PBR. Such companies may find profitability too low and demand higher returns by continuing to seek out third-party or captive financing solutions.

ULSG CASE STUDIES

Product Design and Model Office

The foundation for the ULSG model office is a multi-tiered shadow account design intended to be representative of a product competitive at the top quartile of carriers as of early 2016. This hypothetical ULSG product offers minimal cash value accumulation potential and a lifetime secondary guarantee. The shadow account uses two sets of loads, depending on the timing

Figure 2
Pricing Results

	Pretax Profit Margin*	After-Tax Profit Margin**	Adjusted After-Tax Profit Margin***	Surplus Strain	IRR Adjusted After-Tax
High-Band Model Office, 10-Year Level Premium Term to A95					
1) XXX Stat/Tax, 2001 CSO	16.3%	9.1%	1.9%	–112%	6.1%
2) AG48 Stat, XXX Tax 2001 CSO	15.2%	10.8%	3.7%	–112%	21.5%
3) XXX Stat/Tax, 2017 CSO	16.2%	9.0%	1.9%	–112%	6.3%
4) AG48 Stat, XXX Tax, 2017 CSO	15.4%	10.3%	3.2%	–112%	15.8%
5) PBR NPR+DR Excess Stat, NPR Tax, 2017 CSO	16.2%	8.8%	1.7%	–112%	7.6%
High-Band Model Office, 20-Year Level Premium Term to A95					
1) XXX Stat/Tax, 2001 CSO	19.9%	12.0%	6.5%	–169%	6.4%
2) AG48 Stat, XXX Tax 2001 CSO	16.0%	18.4%	13.2%	–147%	37.5%
3) XXX Stat/Tax, 2017 CSO	19.9%	11.9%	6.6%	–169%	7.1%
4) AG48 Stat, XXX Tax, 2017 CSO	17.8%	15.3%	10.1%	–147%	22.8%
5) PBR NPR+DR Excess Stat, NPR Tax, 2017 CSO	19.9%	11.9%	6.7%	–147%	10.4%

* Pretax profit margin is calculated with discount at the pretax net investment earnings rate (NIER).
** After-tax profit margin is calculated with discount at the pretax NIER.
*** Adjusted after-tax profit margin includes target capital effects and is calculated with discount at the pretax NIER.

of the premium payment and balance of the shadow account. This design is intended to encourage level gross premium payments while remaining compliant with AG38 8E. For this case study, we determined premiums as averages of rates for top quartile carriers, and set shadow account charges such that the level premium payments provided guaranteed coverage until age 110.

The premium levels were determined separately for policies with face amounts of $350,000 and $1,200,000. For the higher face version, per unit load charges for the shadow account were reduced compared with the low face version to meet the competitive target. Other charges remain the same between the two bands.

The ULSG model office is constructed of policies at two sizes—$350,000 and $1,200,000 of face amount. Each size is representative of an average face amount within a band and was evaluated independently. The model office also consisted of four issue ages—35, 45, 55 and 65, both genders, and three nonsmoker and two smoker underwriting classes. The weighting of the model office characteristics was based on observations of in-force blocks and was kept the same for the low and high face versions.

Profitability Results

Figure 3 summarizes the profit measures for the ULSG model office over five pricing situations. Common investment portfolio rates are assumed in each situation. The liability cash flows, including the premium, are unchanged between pricing situations, with the exception of the inclusion of financing costs under AG48. The changes in profitability are thus driven by the changes in reserve and surplus levels, the amount of investment income and the level of income taxes created by them.

In Pricing Situation 1, there is considerable surplus strain in the first year, which holds down the IRR to a level that may be lower than a direct writer's normal new business hurdle rate. In Pricing Situation 2, the first-year strain is greatly reduced and the IRR increases dramatically. Compared with Pricing Situation 1, our results showed a modest decrease in profitability when moving to use 2017 CSO mortality in Pricing Situation 3. This occurred because the underlying product design was not

Figure 3
Pricing Results ULSG With Level Premiums for Coverage to A110, High Band Only

	Pretax Profit Margin*	After-Tax Profit Margin**	Adjusted After-Tax Profit Margin***	Surplus Strain	IRR Adjusted After-Tax
High-Band Model Office					
1) AG38 Stat/Tax, 2001 CSO	18.3%	9.0%	6.8%	–395%	6.3%
2) AG48 Stat, AG38 Tax, 2001 CSO	14.9%	14.8%	13.1%	–267%	11.5%
3) AG38 Stat/Tax, 2017 CSO	17.9%	4.9%	2.6%	–633%	5.6%
4) AG48 Stat, AG38 Tax, 2017 CSO	13.2%	13.0%	11.3%	–270%	10.2%
5) PBR NPR+DR+SR Stat, NPR Tax, 2017 CSO	19.5%	4.4%	2.6%	–285%	5.9%

* Pretax profit margin (PM) is calculated with discount at the pretax NIER.
** After-tax profit margin is calculated with discount at the pretax NIER.
*** Adjusted after-tax profit margin includes target capital effects and is calculated with discount at the pretax NIER.

Key Observations:
1. Pretax, AG38 PMs are higher than AG48 (pricing situations 1 and 3 are higher than 2 and 4).
2. Pretax, PBR PMs are higher than AG38 (Pricing Situation 5 is higher than 3).
3. Adjusted After-Tax, AG48 profits are higher than AG38 (Pricing Situation 4 is higher than 3).
4. Adjusted After-Tax, AG38 PMs are like PBR (Pricing Situation 5 is similar to 3).
5. Adjusted After-Tax, PBR IRRs are slightly higher (Pricing Situation 5 is slightly higher than 3).

modified, resulting in an increase in deficiency reserves. In Pricing Situation 4, applying the AG48 financing transaction to the 2017 CSO basis resulted in a similar impact as with 2001 CSO.

Pricing Situation 5 shows the effect of the full PBR implementation as a decrease in after-tax IRR, an increase in pretax profit margin, and a decrease in after-tax profit margin compared with the AG48 financing results. Compared with AG38 results without financing, the PBR implementation caused an increase in after-tax IRR and pretax profit margin and a decrease in after-tax profit margin. The PBR reserve is the same as the post-financing reserve under AG48 in Pricing Situation 4, so the first-year strain continues to be reduced relative to AG38, which helps to improve the IRR. The removal of the financing costs required to hold the PBR reserve improved profitability relative to AG48 on a pretax basis. However, in some durations, after-tax profitability was hurt relative to the prior regimes by the change from an AG38 tax reserve to the use of a lower NPR as the deductible tax reserve basis under PBR.

OBSERVATIONS AND OTHER COMMENTARY

Impact on Product Development Process

As newly introduced regulation, industry practice regarding how companies will reflect VM-20 in the product development process is in early formation. Coming from a perspective where life insurance pricing has been conducted at both single cell and model office levels, the prospect of having reserve requirements calculated on an aggregate basis introduces new challenges to the process.

The calculation of the NPR is not an issue in this regard, as the NPR portion of the reserve requirement is completed on a seriatim basis and can be applied to a pricing cell. Even the DR, while technically an aggregate reserve requirement, can be calculated at the pricing cell level as the present value of pricing cell cash flows discounted at the DR discount rates. However, DR and SR contributions to the VM-20 reserve are the excess, if any, of the aggregate DR or SR over the sum of the NPR for all policies. It is likely the excess of the DR or SR over the NPR will arise unequally from various issue ages, bands or risk classes for a given product. Decisions on how to allocate excesses may impact profitability.

It is likely that only NPR and DR calculations will be necessary for term products. For some pricing systems, this will permit "single pass" projection of all future reserve amounts. Analysis of an existing product (pretending it is being newly priced), should provide insight into the relative relationships of the NPR and the DR. One method for gaining this understanding could be to calculate a DR-like reserve on a seriatim basis and

compare it with the NPR. This exercise should provide some insight into which pricing cells are likely to generate a positive contribution to DR excess over the NPR, and provide a starting point for considering how to allocate any excess from the DR back to individual pricing cells.

For a ULSG product, the new paradigm is a bit more challenging, given the likely need for the SR. Handling of the NPR and DR could follow what is outlined for the term product above. Some pricing systems may require a multistep projection process for determining the future SR and/or an approximation mechanism for SR effects that are calibrated at a few future points in separate projections. For instance, it could be reasonable to choose five future valuation points at which estimations of the SR in relation to the NPR/DR have been completed. This relationship could be used throughout the pricing process, perhaps with occasional pauses to recalibrate the estimates if significant product features or risk parameters have changed. As cumbersome as this process sounds, companies will get a feel for how to include SR effects, making the process less of a hurdle as comfort is gained.

As with the DR, understanding which cells contribute significantly to a stochastic reserve will be a challenging but necessary step to appropriately allocate reserves at the cell level. It remains to be seen if this cell-level allocation will be attempted for the SR, or if all cells will get a pro rata increase to cell-level pricing reserves to account for SR impacts. From a theoretical standpoint, it stands to reason that some cells will generate more SR than others (and should support the SR more at the cell level). As a simplification, companies may get comfortable with the distribution risk of spreading the SR across all cells.

Impact on Product Premiums

General industry expectation of the impact of VM-20 is that it will allow for lower-priced premiums on some protection-oriented products. This expectation is born from the ability to use company-specific assumptions as well as an industry-presumed lessened need for reserve financing (because VM-20 reserves should be equal to or very like AG48 Actuarial Amounts).

In reality, however, assumptions (and the margins included in them) will vary by company. Smaller companies will lack the credibility of larger companies and may have larger pads and/or earlier grades to industry.

For larger companies, level term premiums may decrease, as non-financed reserve levels should decrease. Non-financed reserves under VM-20 may not be as low as economic reserves under financing, however, so it is possible some companies may experience little ability to lower term premiums. It is also possible tax benefits from traditional financing (pre- or post-AG48) may lead to less favorable results under VM-20 than under previous traditional financing arrangements.

ULSG will likely be an accentuated version of term regarding the effect of company-specific assumptions. Combining the effect of mortality/lapse pads with the product design risk (i.e., how quickly account value is depleted) should create substantial variability in company-specific VM-20 impact on product pricing (and resulting premium levels). VM-20 should have the effect of aligning reserve levels with product design risk, assuming models of the underlying product adequately reflect those risks.

Impact on Product Design

It goes without saying that product design effects of VM-20 are nebulous at this early stage. For base product design of term insurance, level term premiums will still be followed by some sort of annual renewable term (ART) scale, although the importance of having very high guaranteed ultimate rates to achieve the desired segmentation under XXX may subside somewhat. We expect the product design will evolve around encouraging favorable product cash flows and managing risks, rather than a design focused on formulaic reserve requirements.

For base ULSG, product designs can be expected to be widely re-evaluated. With the removal of AG38 mechanics from the equation, it is also possible shadow funds will see less emphasis in the market than in the recent past. Additionally, it is possible the new paradigm allows for designs with somewhat higher account value accumulations than some of the low-account value ULSG products of recent iterations. On one hand, very low account value designs may be able to pass the stochastic exclusion test (SET). On the other, higher account value designs could be impacted less by grading to Canadian term-to-100 lapse rates required by VM-20 after the period of credible lapse experience on policies with low surrender value.

Aside from base product design, it will be interesting to see how other benefits and riders are affected by VM-20. Does waiver of premium (WP) or other ancillary benefits change substantially under VM-20? Anecdotally, WP and other often-offered riders are seldom repriced (or included in the pricing process). Does this change under VM-20? Modeling efforts under VM-20 for base products are perceived to include substantial effort; modeling efforts under VM-20 when riders are included (when perhaps not even modeled previously) would accentuate the issues.

Implementation Strategy

Assuming tax reserves follow the statutory basis and assuming tax reserves under PBR are set at the level of NPR, the case studies suggest companies that finance statutory reserves may have incentive to delay implementation of VM-20 until required by 2020.

Impact on Pricing Systems

Through this pricing exercise, we have identified several areas where legacy pricing systems and approaches may need to evolve. State-of-the-art systems already have inner and outer loop logic to enable forecasting a DR and/or SR into the future. Here are possible ways pricing systems may evolve to facilitate product pricing under VM-20:

- The ability to project future deterministic scenarios launched from the point of a company's assumed baseline Treasury curve would facilitate the ability of a company to reflect its own best estimate of future risk-free interest rates and the deterministic scenarios that result from it.
- From each node's unique DR scenario, systems could add the functionality to determine the company's earned rates at each node based on that scenario and assuming the company's reinvestment strategy.
- Each of the first two bullet points can also be repeated for forecasts of the SR scenarios and the earnings rates thereon. Stochastic projections introduce a layer of complexity that may elevate run times. Systems could potentially accommodate simplifying this by providing options for the user to preselect the nodes at which the SR should be derived.

Allocating aggregate results back to the model cell will be important in managing distribution risk and avoiding soft spots in the pricing and design of insurance products.

WHAT'S COMING IN PHASE 2

Phase 2 of our research will expand upon the case studies shown in Phase 1 and include illustrative pricing examples for a variety of situations. Examples are a small company with limited data, guaranteed YRT premiums, level term product where post-level-term cash flows are assumed, a 30-year level term product, a simplified issue term product and a short pay ULSG product.

The Phase 2 report will provide additional commentary based on interviews with industry sources on other VM-20 issues, including:

- The industry's level of preparedness
- Particular VM-20 concerns or issues that have been identified
- Collaboration and coordination between functional areas within companies
- Expected changes to the pricing process
- Anticipated simplifications to be used when pricing under VM-20
- Use of reinsurance
- Allocation of the VM-20 aggregate reserve amounts to profit cells
- Changes in product design
- Product lines other than level term and ULSG. ■

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ENDNOTE

1 *https://www.soa.org/research-reports/2016/2016-impact-of-vm20-product-development/*

Accelerated Underwriting: A Transformational Trend

By Rick Pretty

INTRODUCTION

As the life insurance industry continues to look for innovative ways to respond to the changing needs, expectations and buying preferences of 21st century consumers, insurance companies and their reinsurance partners have responded by expanding research and development capabilities. As a key area of research within the industry, cross-functional R&D teams of actuaries, underwriters, data scientists and statisticians are focusing on providing value-added intelligence and advice around the mortality risk implications of using risk scores and new data sources in accelerated and enhanced underwriting programs.

ACCELERATED UNDERWRITING: A GROWING LIFE INSURER PRIORITY

With the changing demographics of potential life insurance buyers, particularly the emerging millennials and declining underwriter workforce, life insurers are increasingly recognizing the need for a faster, less intrusive, digitally based insurance-buying experience. But where simplified issue programs have succeeded in achieving speed and less intrusiveness, they have presumably been able to do so at a price that is less competitive with what is normally available only through traditional, full medical underwriting processes. As a result, accelerated underwriting (AUW) programs, which can offer speed, less intrusiveness and competitive pricing, have become a key initiative for many life insurers. Many new data sources have become readily available and are cost effective—such as criminal record checks, clinical lab histories and risk scores based on credit attributes or Rx history. R&D studies from SCOR have shown these data sources to have statistically significant mortality risk attributes that can supplement or, in some cases, replace traditional fluid-based underwriting inputs, often with minimal mortality risk implications.

But it is often challenging for companies to assess the relative mortality impacts of these new data sources, alone or in combination

Figure 1
Distribution Risk Scores by Company

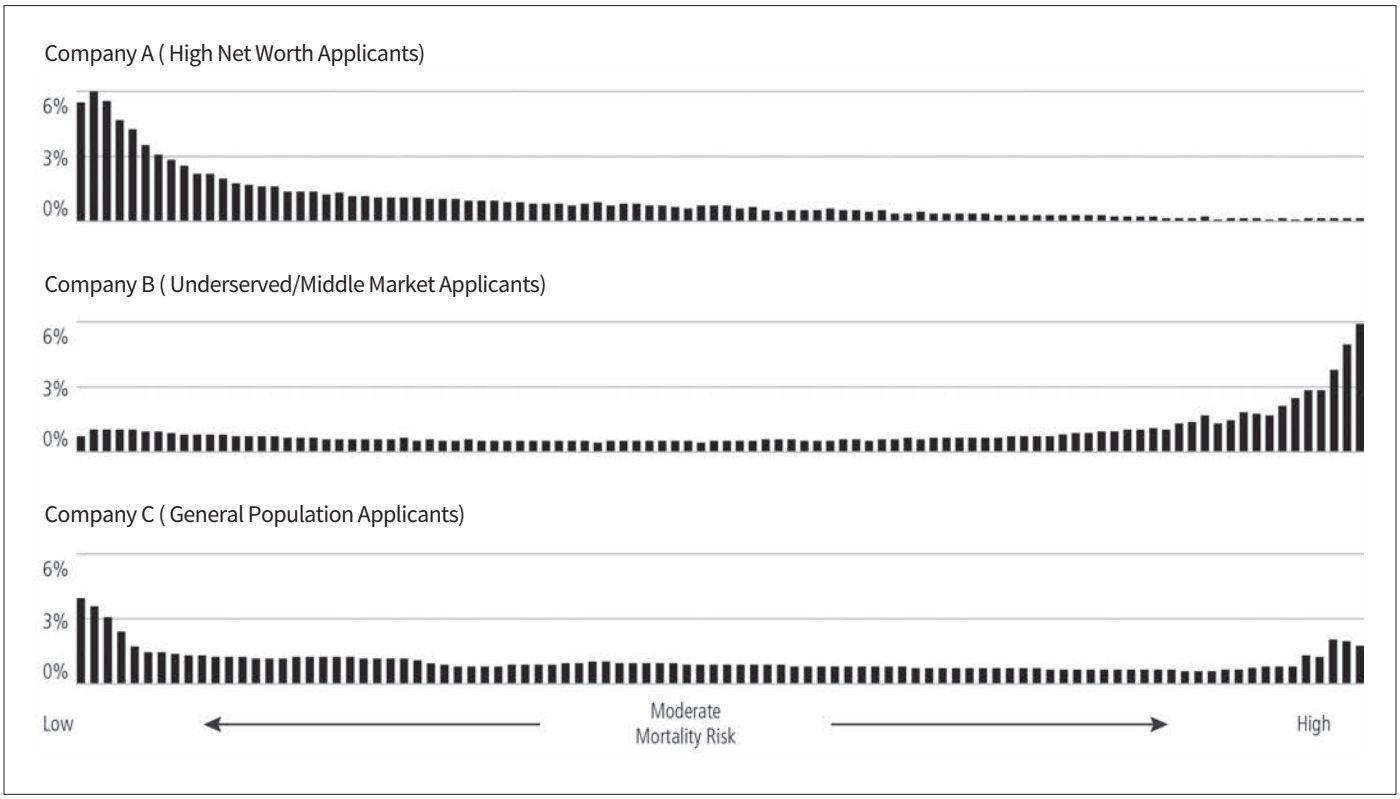
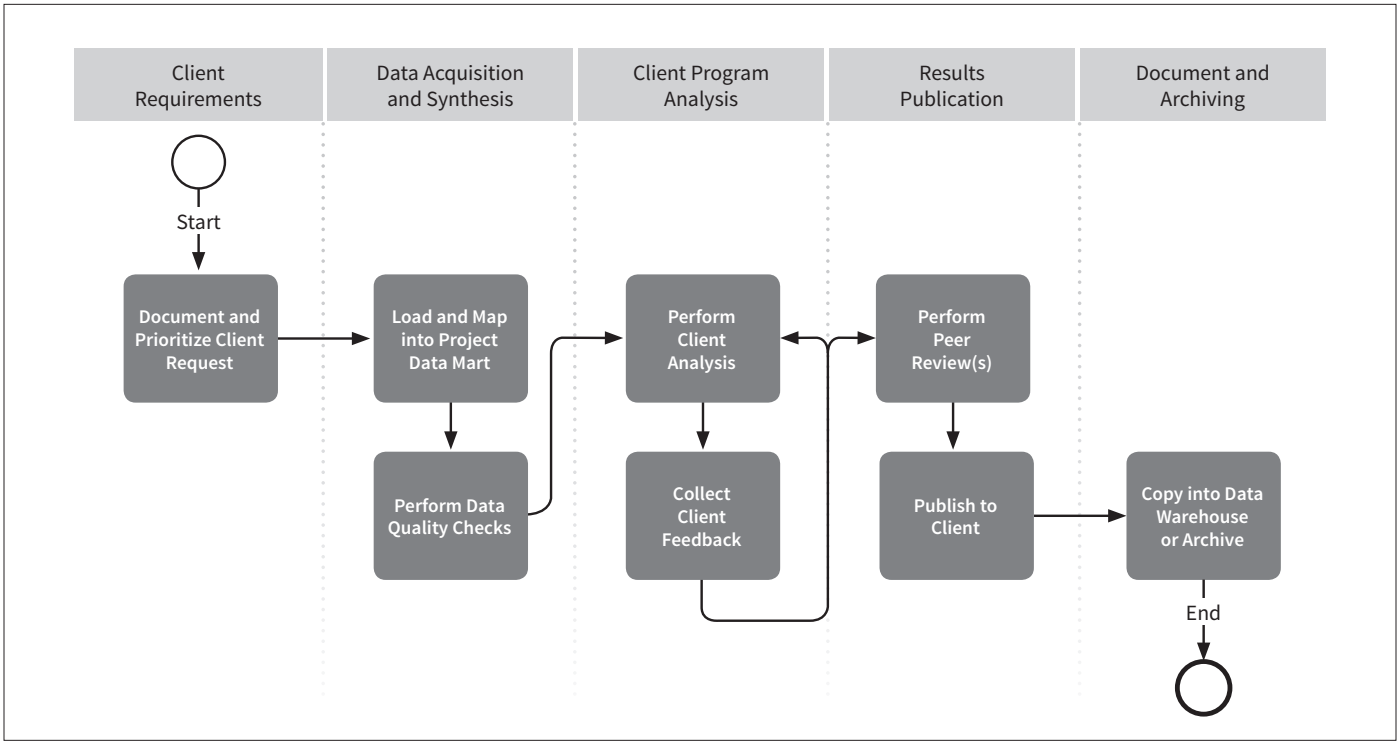


Figure 2
R&D Client Request Process



with other selection factors and to determine which data sources are most relevant for the particular AUW program objectives a company wants to pursue. In many cases, that challenge is being addressed by some reinsurance companies partnering with their client companies to conduct company-specific studies.

REINSURANCE R&D: A PARTNERSHIP APPROACH

The partnership approach that some reinsurance companies are taking is helping client companies evaluate mortality implications of AUW programs by collaborating with their R&D personnel. An evaluation process usually starts with a clear understanding of the insurer's business profile (i.e., target market, distribution channel, product set, past mortality experience). Differences in target markets, distribution channels and product sets can lead to significantly different mortality risk profiles, as seen in Figure 1 in the distribution of credit-based mortality risk scores of applicants from three life insurance companies in studies conducted by SCOR.

Equally important is understanding the needs and objectives of the program or the underwriting changes being considered and what the insurer hopes to achieve. Objectives and reasons for exploring accelerated underwriting and new data sources can vary significantly. Examples include:

- Better segmentation of good risks in an applicant pool (i.e., standard/preferred/super preferred)
- Quick exclusion of non-standard risks from a speed program
- Reducing mortality risk for improved performance or pricing
- Reducing underwriting timelines for a greater proportion of applicants
- Reducing underwriting expenses
- Optimizing existing underwriting resources
- Improving overall life insurance buying experience
- All or any combination of the above

Knowing which objectives apply as well as the priority order of the objectives can lead to different solutions. Whether performing company-specific mortality studies or evaluating mortality risk implications of AUW programs, the reinsurer's understanding of the insurer's business profile and key objectives, and then working in partnership with them, is essential to delivering a company-centric solution or recommendation.

EVALUATING ACCELERATED UNDERWRITING PROGRAMS: A DISCIPLINED PROCESS

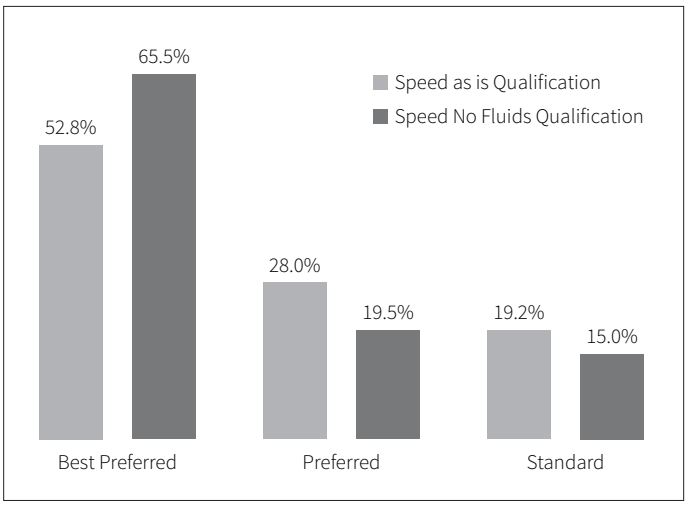
For evaluating new AUW programs or enhancements to existing programs, a disciplined analytical approach should be followed. As an example, once the insurer's business profile and objectives are understood, the process should move into a workflow process similar to what is shown in Figure 2.

First, the team performing the analysis needs to acquire and evaluate the extent of available client data. Although reinsurers can have extensive expertise and data sets that can overcome certain gaps in client data, the meaningfulness of the analytical results will directly depend on the size and detail of the available client data.

For example, a data set that includes all applicants (including not-taken and lapsed policies, along with prior declines) can provide much more analytical value than data that only includes policies issued or in-force. Similarly, a data set that includes Rx or credit-based risk scores attributable to individual applicants has more value than data that only includes scores anonymously ascribed. So, the more detailed and credible the client data, the more relevant and credible will be the predictive analytical results.

Once the client data has been acquired, scrubbed and initially analyzed (the acquisition and synthesis phase), an iterative analysis and review process begins (the program analysis phase) and will likely vary by company. In some cases, the process could move directly into evaluating data sources and testing different parameters. In other cases, an insurer may provide their own analysis and ask the reinsurer for validation. In still other cases, a company-specific mortality study may be needed before any program analysis can begin. The analyses in this phase can include elements such as assessing expected risk class shifts (i.e., expected changes in the proportions of business across risk classes, see Figure 3), in-class mortality risk adjustments and overall expected mortality changes. If the final analysis results in any changes in expected mortality or risk class shifts, pricing teams (both insurer and reinsurer) will likely be engaged to evaluate potential pricing implications.

Figure 3
Class Shifts Due to the Removal of Fluids



Arguably the most important step in the process is the communication of results (the publication phase). Translating results of a highly complex analysis (one that incorporates a multi-variate set of both independent and inter-dependent factors) into an easy-to-understand presentation, can be quite challenging. Whether using a report format or a slide presentation, being able to visually represent findings and conclusions is key to effectively communicating the results.

The final step in the process involves documenting and archiving the analysis and the results to leverage the learnings for future program changes, or other AUW program analyses.

CONCLUSION

The current versions of AUW programs are relatively new, have no credible historical experience data and can be challenging to risk-assess. However, the innovative analytical work being performed within the industry as described in this article, combined with a reinsurer's willingness to price and risk share in these programs, is both collaborative and solution-oriented. It is a value-added element of the partnership approach being used by some reinsurers and their client companies and a contributing factor to the trend in transformational evolution of underwriting processes.

Clients interested in partnering with a reinsurer's R&D team to explore their own potential AUW programs should contact their reinsurer's account executive for further information. ■

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Do You Have a Combo Product With a Secondary Guarantee? If so, Get Ready for PBR

By Kevin Healy and Benjamin Slutsker

Chronic illness acceleration riders have been added to a number of life insurance products in recent years. More than 20 life carriers are in this market, according to LIMRA.[1] These riders allow for a portion of the life insurance death benefit to be accelerated once the insured is diagnosed as chronically ill. Chronic illness is the inability to perform some number of activities of daily living or having a severe cognitive impairment.

Insurance policies with chronic illness features include term, whole life (WL), universal life (UL) and UL with a secondary guarantee (ULSG). In addition, some companies offer chronic illness benefits on fixed premium universal life (FPUL) or current assumption whole life (CAWL) policies with fixed cash value growth that serve as a no-lapse guarantee. With principle-based reserves (PBR) imminent, how do these combo products fit in the new statutory valuation framework?

Currently, combo products require a life insurance reserve as well as an active life reserve (ALR), or policy reserve, and a disabled life reserve (DLR), or claim reserve. The ALR and DLR fund the expected future benefits for the chronic illness portion of the policy. Under PBR, the reserve for individual life insurance policies is equal to the maximum of the net premium reserve (NPR), the deterministic reserve (DR) and the stochastic reserve (SR), subject to exemptions from the DR and SR due to exclusion tests.

Should the chronic illness living benefits be included in the DR and SR for the base policy? The following guidance can be found in the "Riders and Supplemental Benefits" Subsection of the "Reserve Requirements" Section (i.e. Section II) of the National Association of Insurance Commissioners (NAIC) Valuation Manual (VM).

- VM Reserve Requirements Section, Riders and Supplemental Benefits: A.4, "For riders that enhance or modify the terms of the base contract, e.g., a secondary guarantee rider or a cash value enhancement rider, the reserve shall be valued as part of the base policy."
- VM Reserve Requirements Section, Riders and Supplemental Benefits: B, "If a rider or supplemental benefit does not have a separately identified premium or charge, all cash flows associated with the rider or supplemental benefit must be included in the calculation of the reserve for the base policy. For example, reserves for a universal life policy with an accelerated benefit for long-term care must include cash flows from the long-term care benefit in determining minimum reserves in compliance with VM-20. A separate reserve is not determined for the rider or supplemental benefit."

A chronic illness rider that advances the payout of the death benefit to the policyholder, by definition, modifies the terms of the base contract and meets the criteria listed above from VM Reserve Requirements Section, Riders and Supplemental Benefits: A.4. Therefore, the VM requires that such riders are valued along with the base policy, regardless of whether the chronic illness benefits have a separate premium or not.

In addition, VM Reserve Requirements Section, Riders and Supplemental Benefits: B would apply to any riders or features that do not have a separate premium or charge (for example, chronic illness riders using a discounted death benefit approach). In this case, riders also must be valued with the base contract, regardless of the nature of the feature or supplemental benefit.

There are exclusion tests outlined in Section 6 of VM-20 that provide insurers with an opportunity to test for the option to be exempt from the DR and SR calculations. However, policies

classified as term or universal life with secondary guarantees are not eligible for the deterministic exclusion test.[2] In addition, long duration contracts with no mechanism to pass back unfavorable investment performance to policyholder cash values, such as life insurance policies with certain secondary guarantees, may find difficulty passing the stochastic exclusion test.[3]

IMPLICATIONS

For the DR, reserve assumptions are based on prudent estimates. This is fairly similar to how long-term care (LTC) assumptions are set today. However, the DR also requires assets be modeled including prescribed assumptions for the interest rate scenario, equity scenario, spreads and defaults.

For the SR on each valuation date, cash flows are projected under stochastic scenarios for interest rates and market returns. The reserve is set equal to the CTE 70[4] of scenario reserves.[5] In addition, dynamic assumptions for policyholder behavior that vary by scenario are also required. For example, the use of higher lapse rates may be in order when interest rates increase.

Is your company's pricing model ready for this?

The stochastic analysis applies on each valuation date. For pricing and forecasting, this may require a projection of stochastic analyses at each future point in time. Is your company's pricing model ready to project assets? Does your company have dynamic assumptions for policyholder behavior?

For chronic illness benefits that require significant runtime, future projections of stochastic scenarios may be time consuming and warrant modeling simplifications where appropriate. In addition, modeling simplifications may be needed to run multiple iterations for examining the financial profile for each pricing cell.

Another consideration is that the NPR floor for chronic illness riders is not clearly defined in the VM. One interpretation may be to use the current ALR and DLR statutory reserving method for the chronic illness portion of the NPR, along with VM-20 NPR methodology for the life component of reserves. Actuaries are encouraged to stay aware of emerging best practices and applicable clarifications in regulatory guidance.

LINKED-BENEFIT PRODUCTS

Linked-benefit products are similar to chronic illness riders but also include, for an additional cost, a separate pool of money available to pay claims once the life insurance benefits are exhausted. One might argue that the extension rider does not enhance or modify the terms of the base contract. As such, the extension rider may be considered a "supplemental benefit" in the VM[6] and may be valued separately from the base contract, in which case the DR and SR may not be required.

SUMMARY

To recap, as a first step, the exclusion tests should be performed for the DR and SR, including the chronic illness rider cash flows with the base policy projections.

If a product group fails the exclusion tests, the insurer should start planning how to model chronic illness riders and the base policy on a combined basis. Review Section 2.G of VM-20, which allows for simplifications, approximations and modeling efficiency techniques if the company can demonstrate that the use of such techniques does not understate the reserve by a material amount.

If your company has a chronic illness rider on a traditional life insurance product or on a flexible-premium product with a secondary guarantee, you may want to start preparing for how to value the chronic illness rider under PBR including valuation, pricing, forecasting and documentation. If further modeling and implementation efforts are required, you may wish to start early to meet the mandatory regulatory PBR effective date of Jan. 1, 2020. ■

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ENDNOTES

1 Individual Life Combination Product Sales Experience Double-Digit Growth in 2015, LIMRA Study, April 25, 2016

2 Policies may not be eligible for the deterministic exclusion test based on criteria listed in VM-20: Section 6.B. A group of policies pass the deterministic exclusion test if the sum of valuation net premiums for all future years is less than the sum of gross premiums for such policies. Further requirements are listed in Section VM-20: Section 6.B.

3 There are multiple methods allowed for the stochastic exclusion test, which are listed and described in VM-20: Section 6.A.

4 CTE 70 represents the conditional tail expectation (CTE) at the 70th percentile, or the average of the values for the top 30 percent of scenario reserves in the distribution.

5 Scenario reserves are set as the greatest present value of accumulated deficiencies, as described in VM-20: Section 5.

6 Supplemental benefits are described in VM Reserve Requirements Section, Riders and Supplemental Benefits: A.1.

The Possible Effects of Negative Interest Rates on the U.S. Life Insurance Industry

By Richard de Haan and Simpa Baiye

The persistent low interest rate environment in the United States has impacted life insurers for far longer than many expected. However, with potentially rising economic headwinds, negative nominal interest rates, as experienced in some developed economies, are more than merely a hypothetical possibility for the United States. Negative interest rates challenge life insurers' value, profitability and solvency, and affect their product strategy and pricing, product portfolio management, financial reporting, and investment management and asset adequacy.

BACKGROUND

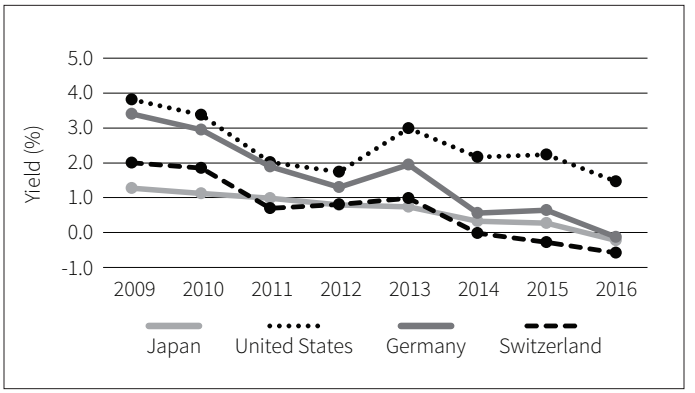
Eight years after the great financial crisis of 2008, U.S. treasury rates remain at multi-generational lows. Federal Reserve Bank and Treasury programs of various types have kept rates at levels intended to spur lending and overall economic growth. Central banks in much of the developed world have kept rates at even lower levels. Low rates have driven down anticipated returns on fixed income investments for both life and property and casualty insurers in a number of developed economies and have even resulted in the need to rehabilitate some life insurers. In Germany, for example, near zero or negative yields on sovereign bonds have put German insurers with significant exposure to fixed-income intensive, guaranteed-return insurance products under significant pressure. Moreover, investors' flight to safety in the wake of Britain's plans to exit the European Union has put further pressure on U.S. treasury rates.

Sovereign interest rates in many developed economies have shown little sign of rising. In fact, figures 1 and 2 show that rates in a number of developed economies are already in, or are headed toward, negative territory. For the United States, the future direction is less certain, although there are mounting pressures that increase the possibility sovereign rates in the United States might go negative, particularly in the first 10 years of the yield curve. Pressures include the flow of capital from developed economies with near zero or negative rates seeking greater positive yields and more attractive credits in the United States (increasing demand increases price, lowering fixed income yields). Also, as waves of retiring baby boomers seek guaranteed returns, and as pension plans increase their allocations to fixed income to manage pension-funding risks, the demand for guaranteed yield is also likely to suppress and even drive yields on debt into negative territory.

The possible impacts of negative nominal treasury rates on product development and pricing product portfolio management, asset adequacy, financial reporting and investment management in the U.S. life insurance industry are as follows:

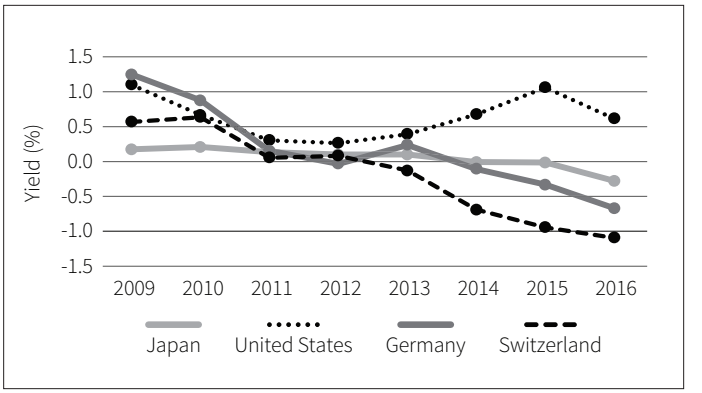
- **Product development.** U.S. standard non-forfeiture laws largely put a floor on interest rate guarantees. In the absence of substantial revisions of the law to account for the possibility of negative interest rates, insurers would likely need to manage this regulatory constraint by offering longer rate

Figure 1
10-Year Sovereign Yields (Rates Through June 30, 2016)



Sources: CNBC Finance, Investing.com

Figure 2
Two-Year Sovereign Rates (Rates Through June 30, 2016)



Sources: CNBC Finance, Investing.com

guarantee terms (where state insurance laws or interstate product compacts allow) or by simply taking or lengthening portfolio yield terms relative to rate guarantee terms. Taking on more asset-liability risk in itself is bound to make rate guarantees less capital efficient and thus more expensive to offer from an economic standpoint. More expensive rate guarantees may result in insurers offering policies with less guaranteed rate elements. Insurers also would likely seek the option to reset rate guarantees much more frequently than they have historically.

Low interest rates in the United States, coupled with the rising equity markets that have been punctuated by periodic market crashes, have made and will continue to make equity-indexed life insurance and annuities an attractive proposition for policyholders. As sovereign rates fall and go into negative territory, insurers will look to find ways to offer insured products without making substantive interest rate guarantees. As a result, structured equity participation products that offer participation in the equity markets while limiting downside losses may increase in popularity.

As insurers reach for yield to avoid the impact of negative benchmark rates at the short end of the yield curve, it is likely they will limit their long-dated guarantee offerings to payout annuities and whole life insurance to meet non-forfeiture requirements and still earn sufficient interest margins.

Insurers also may choose to offer more credit risk guarantees as they reduce their exposure to interest-rate guarantees. Institutional products such as stable-value wraps, for example, allow insurers to make credit risk guarantees with little rate guarantee risk. Insurers may look for ways to offer such products on a retail basis.

- **Product pricing.** Public companies typically price products to earn an internal rate of return of 10 percent or more. The equity investor community implicitly sets this rate based on its broader expectations about risks and rewards for financial services companies relative to lower return and lower risk opportunities. Negative interest rates could lower investor expectations about the risk premium for financial services companies and hence result in a realignment of expectations of product and, ultimately, sector returns. Mid single-digit risk-adjusted return targets may not be an uncommon pricing target for insurance products in a negative interest rate environment.

  Recent deals activity by certain Asian investors confirms this. The desire for positive returns in the U.S. insurance market relative to near-zero or negative rates in Japan has served as motivation to make acquisitions. This activity also has raised the valuations of life insurance companies (at the margin) relative to the unchanged or lower profitability expectations for their in-force businesses.

Low interest rates in the United States...will continue to make equity-indexed life insurance and annuities an attractive proposition for policyholders.

- **Product portfolio management.** Insurers will face much greater pressure on margins earned from legacy blocks of annuity and insurance premiums with high minimum rate guarantees. Negative rates may encourage insurers to offer buyouts on products (e.g., fixed annuities) with larger rate guarantees than they currently offer or can offer in at least the near-term future. To do this successfully, insurers would need to conclusively show policyholders the value of taking upfront gains in lieu of holding onto their attractive rate guarantees.

  - **Product risk disaggregation.** The process of unbundling product risks on a component by component basis may play a more prominent role in helping companies manage their businesses. Reinsuring or transferring interest rate risks to parties willing and able to assume such risks may present new opportunities for insurers to manage the risks of their legacy businesses. They will need to evaluate and minimize risk-transfer counterparty risks in this process. They likewise will need to weigh the benefits of these potential opportunities both for formulaic regulatory reserves and asset-adequacy reserves.

  - Product-line disaggregation. Divestitures or spin-offs of underperforming closed blocks of business or specific lines of business could become the favored approach to dealing with interest-rate sensitive lines of business that drag down insurer earnings and capitalization ratios as rates fall. This could present a new wave of opportunity for private-equity buyers of insurance business and for public-equity investors who can set an appropriate bid for prospective returns on interest-sensitive products.

- **Asset adequacy and capital requirements.** U.S. life insurers periodically assess the adequacy of assets backing reserves under moderately adverse interest rate scenarios to identify possible gaps between assets on hand and liabilities as they come due. They typically evaluate anticipated cost of minimum interest rate guarantees on life insurance,

long-term care and annuities via the assessment process' rate scenarios. The possibility of negative interest rates could lead regulators to change asset-adequacy testing scenarios and effectively place additional surplus strain on insurance companies. The Federal Reserve's increased focus on stress testing also could drive companies to consider and model the impact of negative rate outcomes.

Another impact to consider is the valuation and credit rating of underlying investments. Write downs of book value and credit downgrades will reduce available statutory capital, increase risk-based capital requirements and place additional pressure on insurer capitalizations. This could lead to insurer credit rating downgrades and scaling back or shutting down ratings-sensitive lines of business. Insurer ratings downgrades also may make it more expensive for insurers to refinance their debt. And, while negative rates may offset higher debt refinancing costs resulting from downgrades, such offsets will be less meaningful for insurers that are more exposed to rate guarantees.

- **Financial reporting.** Negative rate scenarios have statutory asset adequacy and capital implications that could result in additional reserves needing to be held in respect of minimum rate guarantees. Public companies also would need to re-evaluate their generally accepted accounting principles (GAAP) reserving, deferred acquisitions costs (DAC) investment yield assumptions and loss-recognition/recoverability testing processes under U.S. GAAP to account for the possibility of negative interest rates. Insurers would need to review and retool interest-rate scenario generators that support these testing processes to account for negative interest rates along the yield curve. Insurers also would need to review their enterprise reporting, valuation and administration systems for both assets and liabilities to ensure consistent reflection and reporting of negative interest rates and their financial impact.

- **Investment management.** As we previously noted, negative interest rates will put more pressure on insurers who take on more credit, equity and duration risk in search of yield. State regulations on insurer asset allocation and the impending reduction in risk-capital requirements for below-investment-grade securities will help temper credit risk pressure. However, structured equity participation products—many of which pay equity-linked coupon income and come with a principal guarantee—may take on a more significant place in insurer portfolios despite their higher surplus-volatility implications relative to traditional fixed income.

  Insurers may look to take on more duration risk but most likely with the option to shorten portfolio durations if the need arises. They may obtain this option through the trading of interest rate options; accordingly, they would need to carefully evaluate derivatives trades of this nature to determine their fit with investment portfolios.

CONCLUSIONS

The consequences of possible negative U.S. treasury rates pose a significant threat to life insurer value, profitability, financial reporting and solvency. Negative rates require a thoughtful re-evaluation of insurer product strategies to offer meaningful value to current and future customers. In particular:

- Insurers may have to earn the margins they hitherto earned on interest rates by taking more traditional insurance risks, de-emphasizing interest rate guarantees and taking more credit risk.

- Negative interest rates would effectively lower capitalization ratios more significantly for insurers that offer long-dated interest rate guarantees.

- Insurers may need to manage their capital in respect of in-force business via reinsurance, by modifying their investment management strategy, through product buyback offers and/or product portfolio sales.

Even though the possibility of negative interest rates may be somewhat remote, life insurers should determine the range and severity of potential impacts on their business, and develop strategies and plans to execute should negative interest rates ever become a reality. ■

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In the Middle: The Role of a Reinsurance Intermediary

By Larry N. Stern

Picture yourself attending a social event, one not related to the insurance industry. We've all been there: Someone approaches you, introduces themself, you do likewise, then they ask "What do you do for a living?" You proudly answer, "I'm an actuary by training." If you live in Hartford (Connecticut, that is; and I lived there in the early 1990s), non-insurance industry individuals DO know what an actuary is; otherwise, the person stares at you with a glassy look in their eyes, politely nodding. You think to yourself, should I explain what an actuary is or add, "I'm a reinsurance intermediary"? The person in front of you has no clue as to either.

Since this article is appearing in a Society of Actuaries' section newsletter, there should be adequate understanding to the first part—actuary by training. As to the second part—reinsurance intermediary, you may have some idea what that is, or you may not have any idea what that is. In either event, please read on to come to a better understanding as to what I do.

WHAT I DO

My pat answer to explaining reinsurance intermediary includes using an example of the real estate agent who works on your behalf to sell your house, brings you prospective buyers and is compensated by THE buyer of your property. Incidentally, the said compensation is part of the negotiated price the buyer pays for the house—the compensation is disclosed in the settlement documents detailing the terms of the transaction.

Essentially, a reinsurance intermediary (aka, intermediary or broker) represents the ceding company in need of capital to support liabilities on their balance sheet. The intermediary brings sources of capital to the table willing to assume risks by purchasing the liabilities for a price—the negotiated reinsurance premium. The premium includes the intermediary's compensation and is disclosed in the settlement documents (aka, reinsurance treaty) detailing the terms of the transaction. Just like the real estate agent, the reinsurance intermediary "earns" compensation by bringing the two parties together.

That's not all the services the intermediary has to offer. In property and casualty reinsurance transactions, intermediaries actually receive the premium payments from the ceding company, remitting them to the reinsurer; likewise, intermediaries receive the benefit payments from the reinsurer, remitting them to the ceding company. The use of the intermediary relieves the ceding company of dealing directly with the reinsurer and/or negotiating terms of the reinsurance treaty. This places the intermediary in a significant financial position in need of liability insurance should there be any mix-ups in the reconciliation of payments, understanding of terms, etc.

Unlike in property/casualty reinsurance transactions, in life insurance (including annuities) reinsurance transactions, the two parties handle settlement of payments directly; the intermediary receives compensation (initial and renewal, if any) from the reinsurer. In health insurance reinsurance transactions, either practice may hold true at the choosing of the ceding company.

WHAT IS THE PURPOSE OF REINSURANCE?

Before delineating the services provided by reinsurance intermediaries, let's discuss what reinsurance is and why companies use it. Simply put, reinsurance is insurance purchased by an insurance company to cover all or part of certain risks on policies issued by that company. Reinsurance is a financial solution allowing companies to market, solicit and sell policies of any size regardless of the company's surplus position.

Actuaries determine the appropriate retention level for policies issued by the company in relationship to the surplus of the company. For example, suppose the actuary at ABC Life Insurance Co. determines its surplus is sufficient to assume $200,000

of risk on any policy sold by the company on any life. What happens when the agent for the company sells a $1 million life insurance policy? ABC retains the $200,000 of death benefit and sells to XYZ Reinsurance Co. $800,000 of death benefit. This transaction is seamless to the insured. ABC needs to rely heavily on XYZ to live up to their agreed part of the transaction when the insured dies.

Reinsurance doesn't involve just one policy; it involves blocks of many policies sold by ABC. Without reinsurance, ABC would be insolvent because it would need to hold enough surplus to cover all the potential death claims on the policies it sells. Therefore, the main purpose of reinsurance is the transfer of risks ABC doesn't want to retain. In exchange for the transfer of risks to XYZ, ABC doesn't need to hold the full reserve (liability) for the amount of death claims in excess of their retention. ABC therefore is allowed a reserve credit for the portion of the risk transferred to XYZ, and XYZ is required to hold the appropriate reserve for the risk it assumes.

WHAT ABOUT THIS TRANSFER OF RISK AND RESERVE CREDIT?

Hold your horses about the services provided by reinsurance intermediaries; let's continue to understand the financial implications of reinsurance on the ceding company (ABC) and reinsurer (XYZ). We all know insurance is a highly regulated industry. Insurance regulators are concerned with protecting the consumers of their jurisdictions to ensure insurance companies live up to the promises they make when selling policies.

Given a portion of the risks assumed by insurance company ABC is transferred to reinsurer XYZ in exchange for the reserve credit on ABC's balance sheet, regulators want to be sure the risks transferred comply with certain rules before ABC is allowed to take the reserve credit (a reduction in liabilities, increase in surplus).

Risk transfer is the equitable transfer of all significant risks and responsibility for payment of future benefits, from ceding company ABC in exchange for reserve credit, to reinsurer XYZ in exchange for compensation (reinsurance premium). There are 11 risk transfer rules applicable to "coinsurance" reinsurance transactions. Coinsurance is a form of reinsurance whereby ABC and XYZ share an equitable "partnership" in proportion to the premiums paid by the insureds, the benefits provided by the policies and the expenses incurred in administrating the policies. There are other forms of coinsurance, including modified coinsurance and coinsurance funds withheld. Any form of reinsurance with coinsurance in the title means the ceding company and reinsurer retain their respective partnership relationship.

If the reinsurance is defined as yearly renewable term (YRT), only seven of the 11 rules apply. YRT is a form of reinsurance whereby XYZ determines the reinsurance premium to be paid by ABC; each company is responsible for its respective proportion of benefits provided by the policies.

If relevant risk transfer rules are followed, ceding company ABC will be entitled to reserve credit because XYZ holds reserves for its proportion of the risks assumed. Just like there are rules for risk transfer, there are also rules governing the reserve credit allowed ABC and the collateral required to be held by XYZ. These rules accentuate the consumer protection imposed by the regulators to be sure ABC and XYZ are financially secure to pay benefits.

WHAT SERVICES DO REINSURANCE INTERMEDIARIES PROVIDE?

Let's turn our attention to the services intermediaries provide to ceding company clients. Since insurance and reinsurance are highly regulated, the services provided by intermediaries effectively help ensure relevant regulations are followed for ABC to transfer risks and receive reserve credit. These services include, but are not limited to:

- Follow ceding company's (client's) instructions and written standards
  - Identify client's need for capital and purpose for reinsurance
  - Identify what risks are to be transferred—in-force block of policies or new business policies as they are issued
  - Assist in the financial analysis of potential blocks of policies to be reinsured
  - Obtain written permission from client before negotiating reinsurance terms
  - Disclose to client any relationship with potential sources of solutions (sources could be banks, other insurance companies and/or reinsurers)
- Solicit from reliable sources potential reinsurance solutions
  - Obtain financial strength and solvency ratings of potential sources
- Assist in the review and analysis of proposed reinsurance solutions
- Facilitate the negotiation of terms and conditions for potential reinsurance solutions between client and potential sources
  - Not accept any terms or conditions on behalf of client
  - Provide only the data client has authorized to be exchanged
- Not accept any allowance, proceeds or other settlements or instructions from any of the potential sources on behalf of the client

Just as regulations govern the actions of ceding companies and reinsurers, intermediaries are required to be licensed by the state in which they are located and operate. It is generally agreed each state provides a reciprocal agreement eliminating the necessity to be licensed in all jurisdictions in which the intermediary may practice.

WHAT ABOUT THE FINANCIAL SIZE OF THE CLIENT?

Reinsurance is an infrequent activity—not something a company actuary entertains on a regular basis. The need for reinsurance arises with the development of new products, or an expressed need to raise capital embedded in a block of policies or acquire a block of policies from another company. I like to let my clients know they can consider me an extension of their staff. My purpose is to remove the burden of reinsurance solicitation and negotiation from their "plates" to allow them to concentrate on their everyday responsibilities.

Some of my recent client engagements include the following:

- Performing cash flow projections of future profitability to determine appropriate quota share proportions of a block to be reinsured
  - Assisting clients to evaluate appropriate levels of economic reserves for potential XXX/AXXX reserve redundancy financing solutions
  - Assisting clients to form captive reinsurance companies for the purpose of securing XXX/AXXX redundant reserve financing solutions
  - Assisting clients in securing financing solutions for XXX/AXXX redundant reserves
- Assisting clients to understand reserve requirements under Chapter 20 of the National Association of Insurance Commissioners (NAIC) Valuation Manual (VM-20), NAIC's Actuarial Guideline XLVIII (AG48) and principle-based reserves (PBR)
- Assisting clients to recapture blocks of reinsured policies because the client increased their retention limit
- Assisting clients to understand complex reinsurance structures for transferring variable annuity living benefit rider risks
- Assisting clients to understand how special banking transactions can overcome the high minimum guaranteed credited interest requirements in legacy fixed annuity blocks of policies
- Assisting clients to prepare requests for proposals to evaluate and select mortality risk reinsurance partners for term insurance products
- Representing clients in the role of expert witness to testify at arbitration or mediation proceedings

The degree of assistance depends on the size of the company. Many large clients have existing relationships with the same sources as I do. There is a reluctance to utilize my services because they realize intermediary compensation will be a factor in the price of the reinsurance solution. I like to demonstrate that by utilizing my services, the transaction can be completed in a much shorter time frame, my relationships with the potential source may be with the right decision-makers to complete the transaction, and my dedicated effort will free up internal resources for other, more important tasks at hand. And, my compensation is immaterial to the cost of the solution.

With medium and small clients, my expertise and knowledge play more important roles as I can open doors to potential sources for which the client has not previously been served, or utilizing me as an extension of their staff allows the reinsurance transaction to take prominence over other internal projects.

I have 45 year's experience in the insurance industry—reinsurance has played an important role in almost every position I have held. Since September 2002, I have been a sole-practitioner, consulting actuary and licensed reinsurance intermediary.

Back to that social event. At the end of our conversation we exchanged business cards. Across the center top of mine is my motto, "Securing financial solutions to improve the bottom line"; to which my new acquaintance said, "Oh, that's what you do!" ■

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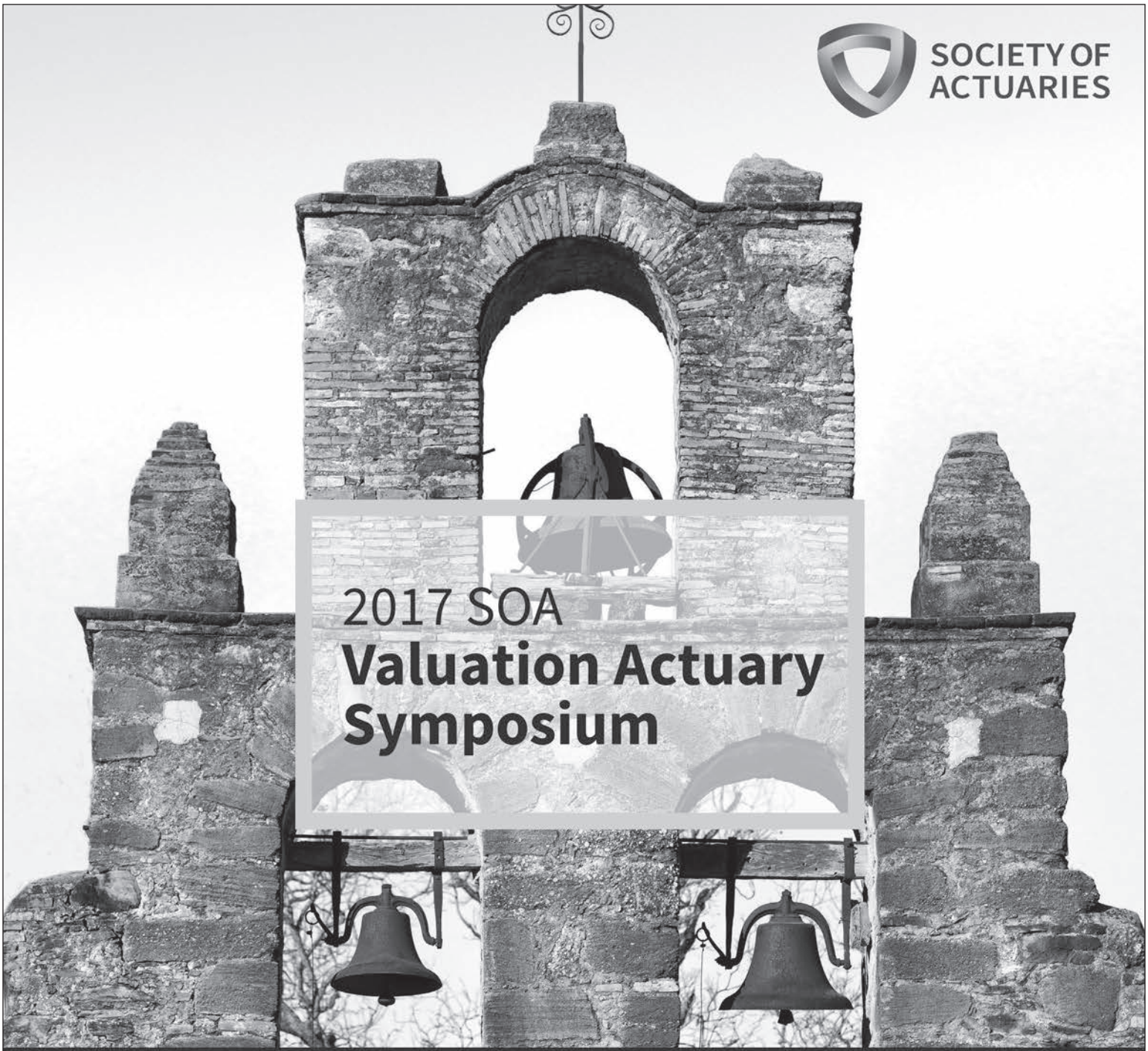

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