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PBA Corner

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During months leading up to the Spring 2012 NAIC National meeting, regulators dealt with issues of material consequence relating to VM-20, the chapter of the Valuation Manual specifying valuation requirements for life insurance under a principle-based approach (PBA). With the meeting behind us, the direction of critical aspects of the Valuation Manual is becoming clearer. This article discusses these and other related issues with ties to principle-based valuation. As a result of the Life Actuarial Task Force's (LATF) work on VM-20, the entire Valuation Manual was exposed for comment at the conclusion of the NAIC Spring National meeting. It is LATF's objective to adopt the Valuation Manual during the June 2012 National Meeting.

ASSUMPTION MARGINS

Findings from the NAIC VM-20 Impact Study (Impact Study) were fairly clear in demonstrating that explicit margins applied to every material assumption has a compounding effect, resulting in modeled reserve components (deterministic and stochastic reserve amounts) with excessive conservatism. LATF discussed this outcome in the weeks leading up to the spring meeting. VM-20 Section 9.B.1 clearly states that the company must determine an explicit set of initial margins for each material assumption independently. Such initial margins may be reduced to reflect the fact that risk factors are not normally 100 percent correlated, providing the company demonstrates the method used to justify such a reduction is reasonable considering the scenarios contributing to the deterministic or stochastic reserve amount.

During the pre-meeting conference calls, an alternative approach to setting margins was proposed by an LATF member. The alternative approach focuses on developing the modeled reserve using anticipated experience (i.e., without margins) then adjusting the result by an amount representing an aggregate margin. One method of quantifying the aggregate margin may be to use the cost of capital method.[1] Other concepts floated during the regulatory discussion were that if this approach were pursued, then the anticipated experience (or best estimate) assumptions may need some degree of guardrail established to keep the company's assumption within the boundaries of an acceptable range.

In the end, and because this proposal was such a material change from the explicit individual margin concept, LATF chose to defer the issue and stay committed to the language of the margin requirements in the current exposure draft. The idea of the aggregate margin approach, if addressed, will likely be addressed after adoption of the Valuation Manual.

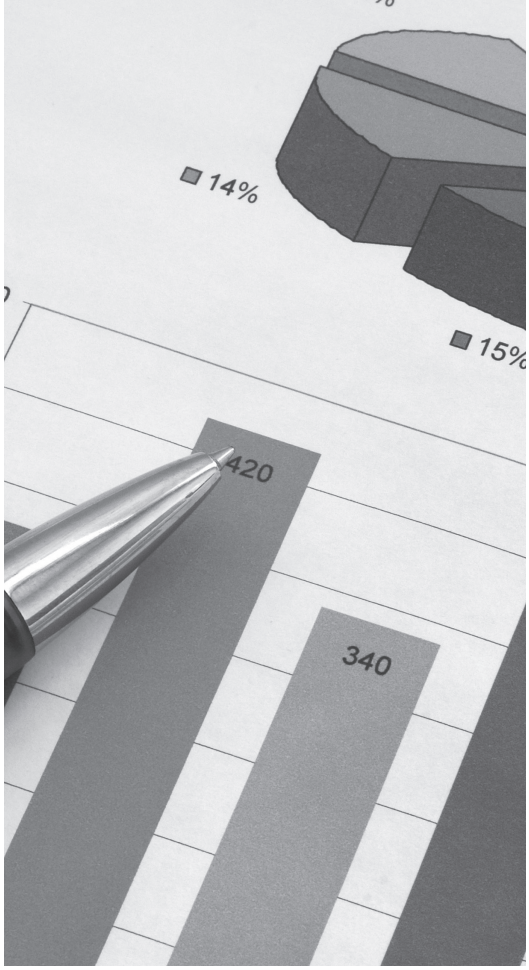
MORTALITY ASSUMPTION

Here too, findings from the Impact Study confirmed that modifications were necessary in the mortality requirements of VM-20. The finding at the heart of the proposed change to mortality assumption-setting comes from the mortality attribution analysis. The Impact Study revealed that the requirement for a company to credibility-blend its own experience with that of an industry table produced an overly conservative result, even before considering margins on the blended assumption. Changes to the mortality assumption requirements were proposed by the American Academy of Actuaries' Life Reserve Work Group (LRWG) and ultimately adopted by LATF. These requirements apply to the modeled components of VM-20; the deterministic and stochastic reserve amounts. Listed below are key elements of the revised requirement.

- The concept of a credibility segment is discarded; the concept of mortality segment is retained. The revisions define a mortality segment as a group of policies with different mortality experience than other segments (male vs. female; smoker vs. nonsmoker; preferred vs. standard; etc.)

- The gatekeeper of 30 deaths for the simplified approach is also discarded. The revised requirements involve one process, whereby, if company mortality experience is not available or limited, the company can choose to use an applicable industry table in lieu of its own company experience.

- *Company Experience Mortality Rates Are…*



- derived from company experience data in the following priority order: (1) actual experience within the mortality segment for the book of business being valued; (2) actual experience from other books of business within the company with similar underwriting processes; (3) experience data from other sources, as appropriate, such as mortality pools in which the company participates under terms of reinsurance agreements.
- allowed to reflect historical mortality improvement from the central point of the study to the valuation date, but not beyond.
- subject to a stated guardrail that prohibits the assumed mortality rates from being lower than mortality rates the company expects to emerge. Justification for the comparison must be included in the actuarial report.

• *Applicable Industry Basic Tables*

- Continue to be based on the 2008 VBT including the primary, limited underwriting RR table forms. The company should select the rates within that table most appropriately reflecting the risk characteristics of the segment.
- In determining the applicable table, the company may use the underwriting criteria scoring procedure (USC) or another appropriate method. In the previous requirements, the USC was the only option.
- May be improved from the date of the industry basic table to the valuation date using published improvement factors.

• *Anticipated Experience Assumption*

- If the company chooses to use an industry table in lieu of its company experience mortality rates, as above, then the anticipated experience rates shall be equal to these industry table rates.
- Otherwise, the company will use its own company experience mortality rates for policy durations in which there exists sufficient company data. Previous requirements called for credibility blending at all policy durations.
- The sufficient data period is defined as the last duration at which sufficient company experience data exists. Sufficient experience data is defined as a minimum of [X] claims per year of exposure period. LATF is working on determining [X].
- Once the sufficient data period is known, the credibility of the data within that period is determined using common actuarial methods for credibility (i.e., limited fluctuation; Panjer). A single level of credibility is associated with the sufficient data period, rather than for durations within the period.
- Given the sufficient data period and the credibility of the data within the period, the company uses a table in VM-20 that prescribes the year to begin grading the company experience mortality rates to the applicable industry mortality rates. It also prescribes the year at which the grading must reach 100 percent of the industry rates. The higher the credibility of the data in the sufficient data period, the greater the number of durations of company experience can be recognized before beginning the grading process.
- Again, the new guardrail is restated such that the anticipated experience assumption may not

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be less than the experience mortality rates the company expects to emerge, with documentation provided in the actuarial report.

- *Mortality Margin*
  The margin is expected to be specified as a percentage increase to the anticipated experience assumption mortality rates. The percentages may follow a select and ultimate schedule. LATF will need to develop these percentages in advance of adoption.

REINVESTMENT ASSUMPTION

The Impact Study was performed on two alternative reinvestment assumptions, and LATF ultimately adopted a modification of one of these two alternatives. The aspect of the VM-20 requirements that was modified was the maximum reinvestment yield cap. Whereas the spread on reinvestment yields had been set at a 50/50 blend of A and BBB quality fixed income assets, this criteria was modified to be a 50/50 blend of AA and A quality fixed income assets. This requirement comes into play in the VM-20 language in Section 7.E. that states that a company's minimum reserve cannot be less than that amount that would be obtained by substituting an alternative reinvestment strategy in which all fixed income reinvestment assets are public noncallable corporate bonds with gross asset spreads, asset default costs, and investment expenses by projection year that are consistent with a credit quality blend of 50 percent PBR credit rating 6 (A2/A) and 50 percent PBR credit rating 3 (Aa2/AA).

NET PREMIUM RESERVE METHODOLOGY

The Net Premium Reserve (NPR) methodology is one of three components used in determining the Principle-Based Reserve (PBR) for term policies and for universal life policies with secondary guarantees in excess of five years (ULSG). The PBR is the maximum of the deterministic, stochastic, and NPR reserves for these products. For term policies, the NPR was shown to be the prevailing component in the VM-20 process, demonstrated by Impact Study results. Conservative mortality assumptions from the credibility blending requirements of the VM-20 version used in the Impact Study was likely a material factor in this outcome, and was a compelling reason for the mortality assumption changes described above.

For ULSG, the problem was more complicated. While early duration NPR may have seemed reasonable, the projected pattern was not. The NPR amounts calculated by participating companies did not satisfy the objective of the NPR, which is to provide a result that follows the economics of the policy. LATF has turned to the American Council of Life Insurers (ACLI) for a revision to the NPR requirements for ULSG. The ACLI has enlisted member companies in determining a method that better reflects the flexibility and structure of the ULSG product type.

DETERMINISTIC EXCLUSION TEST

The Deterministic Exclusion Test (DET) may be performed for groups of policies that have been subjected to and passed the stochastic exclusion test.[2] The DET, if passed, allows the company to calculate only the net premium reserve for this group of policies. Recently the language in VM-20 was changed such that groups of policies meeting the definition for ULSG are deemed not to pass the DET, regardless of the outcome of the stochastic exclusion test.

OTHER DEVELOPMENTS RELATED TO PBA

Actuarial Guideline XXXVIII

The Joint Working Group of the Life Insurance and Annuities (A) Committee and Financial Condition (E) Committee, created to address Actuarial Guideline XXXVIII (AG 38) issues, continues its work. The group was formed for purposes of developing interim guidelines and tools for regulators to use in assessing the appropriateness of statutory reserves established for ULSG products, including term universal life products.

The margin is expected to be specified as a percentage increase to the anticipated experience assumption mortality rates.

The proposed guidelines and tools are referred to as the Draft Framework.[3] The Draft Framework calls for closed blocks of in-force business to be evaluated by actuaries on a stand-alone basis using asset adequacy analyses incorporating moderately adverse scenarios. Prospective business issued after the specified date but prior to the effective date of VM-20 would be reserved using a formulaic approach consistent with LATF's interpretation of AG38. Policies issued on or after the effective date of VM-20 would be subject to VM-20.

The Draft Framework includes two appendices: Appendix I: Issues to be Addressed and Appendix II: Sequence of Key Decisions. The key decision points are titled Phase I, Phase II and Phase III decisions. The joint working group approved, with revisions, the Phase I decisions in February 2012, and this action was later adopted by the Financial Condition (E) Committee at the NAIC Spring Meeting.

Phase 1 decisions confirm an approach whereby in-force business is treated separately from prospective business. Phase 1 also allows for the NAIC to retain one or more independent, consulting actuaries to advise the Joint Working Group with respect to the issues in Appendix I of the Draft Framework. One of these issues is to identify the date defining in-force business from prospective business.

Phase II decisions include details of scope, implementation concepts, assumptions and methods.

Phase III decisions include state and legal issues that accompany making the Draft Framework operative for all states, assessing the in-force analysis and conclusions on in-force blocks and documentation requirements. Refer to the Draft Framework document for more details. This development relates to PBA because the Draft Framework is perceived to be an interim bridge between current statutory requirements and requirements of VM-20, once implemented.

Mortality Table Development

The Society of Actuaries and American Academy of Actuaries are working on developing several new valuation mortality tables. Each of these tables is underway and at different places on the continuum of data collection to completed table. It is expected that these tables will be available for use at about the same time that VM-20 requirements become operative. A single data call was used to collect company data for purposes of developing a simplified issue mortality table, a guaranteed issue mortality table and a pre-need mortality table. Analysis of each of these types is underway, with the first draft of these tables expected by late 2012.

A 2014 Commissioner's Standard Ordinary mortality table as well as the corresponding 2014 Valuation Basic Table are also in development. When complete, this collection of tables will include aggregate as well as preferred risk table structures. ■

END NOTES

1 For detail on this method, refer to SOA Research Report "Analysis of Methods for Determining Margins for Uncertainty under a Principal-Based Framework for Life Insurance and Annuity Products," March 31, 2009. Larry Rubin, Nicholas Ranson, Xiaokai Shi.

2 The stochastic exclusion test, if passed, means the company need not calculate the stochastic reserve for that group of policies.

3 Draft Framework, Jan. 13, 2012: http://www.naic.org/committees_jt_a_e_wg_draft_framework.pdf