



AMERICAN ACADEMY *of* ACTUARIES

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Office of the Associate Chief Counsel
Financial Institutions and Products
Internal Revenue Service
CC:PA:LPD:PR
1111 Constitution Avenue, NW
Washington, DC 20224

Re: Notice 2008-18
Life Insurance Reserves – Proposed AG VACARVM and Life PBR

The American Academy of Actuaries' Life Tax Steering Group¹ (Academy Group) would like to express our appreciation to the Treasury Department (Treasury) and the Internal Revenue Service (IRS) for the timely issuance of Notice 2008-18 (Notice) regarding the proposed Actuarial Guideline VACARVM (Proposed AG VACARVM) for variable annuities and the proposed principle-based approach for calculating U.S. statutory reserves for life insurance contained in VM-20² (Proposed Life PBR). The Notice demonstrates an understanding of the significance of the principle-based effort and a willingness by Treasury and the IRS to raise issues and concerns regarding potential federal income tax issues that may arise as a result of the adoption of the proposed principle-based reserving methods. We would also like to express our appreciation for inviting public comments on these issues.

The Academy Group respectfully requests your consideration of the following comments, covering several issues surrounding principle-based reserves discussed in the Notice. Our comments fall into five topic areas:

1. Constraints on Setting Assumptions for Principle-Based Reserves
2. Why a Provision for Uncertainty is Included in Reserves
3. Discussion of the Gross Premium Valuation Method
4. Determination of Mortality Assumptions
5. Auditing Principle-Based Reserves

While the Academy Group recognizes that these proposals are nearing completion, they are still proposals and are thus subject to further modifications at either the NAIC or state legislative level.

¹The American Academy of Actuaries' mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

² VM-20 is a section of the proposed NAIC Valuation Manual pertaining to principles-based life insurance reserves. The proposed NAIC Valuation Manual will support the proposed changes to the NAIC Model Standard Valuation Law and the introduction of principles-based reserves.

I. Constraints on Setting Assumptions for Principle-Based Reserves

The Academy Group recognizes that, upon initial examination, it may appear that the actuary is given wide latitude in setting valuation assumptions used to determine reserves under principle-based reserves (PBR)³. Substantial consideration has been put into the discipline that will surround the setting of assumptions within PBR. The following is a description of the constraints and requirements for setting assumptions under PBR.

Under PBR, valuation assumptions will fall into one or more of three categories:

1. Prescribed assumptions;
2. Stochastically modeled assumptions;
3. Prudent estimate assumptions.

Prescribed assumptions are used for risks where the company has very little or no influence or control over the outcome. For these types of risks, all companies will be required to use the same assumptions. Examples of current prescribed assumptions in VM-20 for life product reserves (i.e., Proposed Life PBR) include:

- The projected new money interest rates on future new investments used in the calculation of the deterministic reserve.
- The pattern of future returns on equity investments used in the calculation of the deterministic reserve

Stochastically modeled assumptions are used for risks that must fall within prescribed parameters. Examples of risk factors that are stochastically modeled include interest rate movements and equity performance (i.e., S&P 500 returns and returns of other equity investments) utilized in the calculation of the stochastic reserve

The stochastic scenarios employed in the calculation of the stochastic reserve must use either prescribed scenarios, prescribed scenario generators with prescribed parameters, or company-generated scenarios that meet prescribed calibration criteria. Prescribed calibration criteria (rather than prescribed scenario generators) are utilized to allow new techniques for modeling and hedging to emerge while still ensuring consistent results across companies. Regarding company-generated scenarios, VM-20 states the following:

These stochastically generated paths shall be determined by: . . . models developed by the company if prescribed calibration criteria standards are met, as described in E.5.5.3. Returns for equity performance and groupings of variable funds shall be determined on a stochastic basis such that the resulting distribution of the gross wealth ratios of the Scenarios meets the prescribed scenario calibration criteria. If the company chooses to use a fully integrated interest rate and equity return model, the equity return scenarios must satisfy the prescribed equity return calibration criteria and the interest rate scenarios must satisfy the prescribed interest rate calibration criteria, as described in E.5.5.5.

These calibration requirements ensure that even though the actual scenarios used to determine the stochastic reserve component may differ by company, the resulting reserves will not vary materially for similarly situated companies.

Prudent estimate assumptions are used in PBR for risks where company practice has a degree of influence on the outcome of the risk factor. Therefore, the resulting valuation assumptions for this

³ The reference to PBR in this discussion includes both the stochastic and deterministic components in Proposed Life PBR and the stochastic component in Proposed AG VACARVM.

category could differ by company, but any differences will reflect the varying risk profiles of each company. Examples of prudent estimate assumptions include:

- Mortality risks (assumptions could vary due to different underwriting rules and standards, different markets, etc.);
- Policyholder behavior risks such as lapse and withdrawals (assumptions could vary due to different contract provisions, different distribution channels, different marketing practices, etc.);
- Investment risks (assumptions could vary due to different investment strategies in terms of quality, duration, diversification, etc.).

Prudent estimate assumptions under PBR consist of anticipated experience with a margin for estimation error and adverse deviation. PBR requires that margins be established at the level that appropriately reflects the degree of uncertainty in the underlying anticipated experience assumption (the rationale and purpose of risk margins are addressed in the next section of this document).

The anticipated experience assumption is the expected future experience for a risk factor considering all available and relevant information pertaining to the risk factor. A margin is then applied to the anticipated experience assumption to provide for statistical uncertainty due to estimation error and adverse deviation in the underlying anticipated experience. Both components of prudent estimate assumptions (i.e., anticipated experience assumptions and margins) will generally vary by company since the underlying risks vary by company based on the company's specific product designs and product management decisions. However, the approaches that are used to determine both components have constraints and provisions that are intended to limit the range of subjectivity an actuary can have in establishing the valuation assumptions.

The anticipated experience assumption for each risk factor must be based on available, relevant and credible experience, including, but not limited to, the company's own experience studies and/or industry experience studies that are consistent with the company's risk exposure. To the extent that a company has credible, company-specific experience the actuary must use that experience to establish the assumption that reflects that company's risks. However, if the company does not have relevant or credible company experience for a particular risk, then the actuary must use industry experience or other relevant data to establish the assumption that reflects the company's risks⁴.

Although prudent estimate assumptions for a given risk factor (e.g., mortality) may vary by company due to differences that reflect the risk exposures and underlying experience of each company, a discussion has begun within the National Association of Insurance Commissioners (NAIC) to find ways to limit the degree of subjectivity utilized by a company when determining prudent estimate assumptions, and also to ensure that there are an adequate number of control checks and balances. The exact nature and extent of these limits and controls have not been fully resolved by the NAIC at this time, but several key elements have begun to emerge from those discussions:

- A requirement to provide full disclosure and documentation of the rationale and methods used to determine the prudent estimate assumption for each material risk. This information could be available to regulators and the IRS to help determine the appropriateness of valuation assumptions through comparison of the results to other companies and to the entire industry.
- A requirement for companies to submit their company experience data (e.g., mortality, lapse, etc) to a centralized statistical agent to be used to develop frequently updated industry experience tables. These tables could assist regulators and the IRS in assessing the appropriateness of assumptions for an individual company, and will provide updated industry experience for use by those companies that do not have relevant or credible company experience.

⁴ Industry assumptions are being developed for many of the risk factors.

Also, new Actuarial Standards of Practice (ASOPs) are being developed specifically for PBR that may provide additional professional standards to assist the actuary in developing appropriate prudent estimate assumptions.

The above elements can be used to provide an annual process to update and improve the ability to assess the appropriateness of assumptions for each company. This process should serve as a constraint over time, since as more data is submitted and more information is evaluated, the range of expected differences in prudent estimate assumptions between companies with similar risk and product characteristics would be expected to narrow.

In summary, variations in assumptions by company that are based on experience (and/or data-based risk differences) are a fundamental element of PBR. There may be some variation in assumptions between similarly situated companies that arise from the exercise of actuarial judgment, but there are elements in the PBR requirements that act as constraints to limit the degree of actuarial judgment when establishing valuation assumptions. The final form of these limits and controls has not yet been determined by the NAIC, but several key elements have begun to emerge, including:

- Prescribed assumptions and prescribed parameters for stochastically generated assumptions that eliminate company discretion for these risk factors.
- The requirement that prudent estimate assumptions be based on relevant, available and credible experience.
- The requirement for submission of company experience to be used to develop frequently updated industry experience tables.
- Industry experience tables that provide a basis for setting valuation assumptions when the company does not have relevant, available and credible company experience.
- Extensive documentation and disclosure requirements that will enable regulators, the IRS and peer reviewers to validate the use of the valuation assumptions.
- An annual process to gather data that could be available to regulators and the IRS for monitoring the appropriateness of prudent estimate assumptions.

II. Why a Provision for Uncertainty is Included in Reserves

This background is intended to clarify two items from the Notice. The first item is the comment in Section 3.03 on Page 9 of the Notice regarding the deductibility of reserves based on an expected value versus reserves that are for solvency or contingencies. The second item is also from Section 3.03 on Page 9 of the Notice which states: “If this concern is not satisfied, the Treasury Department and IRS may (i) permit a contract-by-contract apportionment of a stochastically-determined reserve, but with appropriate adjustments so that reserve reflects an expected value of the company's obligations (for example, by adjusting the CTE from 65 to 0, assuming that the chosen scenarios have a uniform probability distribution and the scenarios not chosen have a zero probability)”.

PBR uses the term “margins” in a very specialized sense, applicable to establishing reserve liabilities for the insurance industry. In this context, margins are a necessary part of the reserve liability companies need to hold. To not include these margins in reserves would be imprudent and inconsistent with the application of actuarial methodology.

PBR requires margins to be applied to anticipated experience assumptions to provide for statistical uncertainty due to estimation error and adverse deviation in the underlying anticipated experience. The

risks faced by insurers are notable not only for the randomness of their outcomes, but also because, by their nature, the precise probability distributions are difficult to estimate. Even though past experience may be known it is not a reliable predictor of future results. Long-standing actuarial practice supports the use of assumptions that reflect this uncertainty in order to accurately estimate the liability in the face of such risks. The use of anticipated experience assumptions alone could produce a liability that will be inadequate to fulfill the promises inherent in a long-term insurance contract. The prudent estimate assumptions required by PBR are a continuation of this established actuarial methodology.

While PBR is not a market-value system, it is instructive to look at such systems and the fact that even market values require a provision for uncertainty. A key foundation of modern valuation of financial liabilities and assets occurred more than 40 years ago with the development of the Black/Scholes theorem. This theorem was able to replicate the value of options and futures traded in the market place. An illustration of the Black/Scholes theorem can be seen from the empirical observation that if the probability of two payoff result events are equally likely, i.e., no payoff and a payoff of \$1, most individuals prefer to accept a certain payoff of something less than 50 cents to avoid being exposed to the possibility of no payoff. This is because individuals and companies are by their nature not risk-neutral in their “risk-taking.” The theorem’s key insight is that in addition to the simple probabilistic expected value of a set of cash flows, there is also a “cost” or price for assuming risk that is described as a margin added for uncertainty. This margin for uncertainty can be measured and validated in the prices observed in the marketplace and impacts the value of a financial liability or an asset. To summarize at a simplified level, the insurer is worried about two items. Will there be enough coin flips to actually arrive at the “expected value” and is the coin actually fair? This is why expected value is not the basis used for setting reserves.

This helps explain why insurance prices include a “cost” for those who wish to avoid or mitigate risk and a risk premium for those who are willing to assume risk and why long standing actuarial practice supports the need for assumptions that contain margins for uncertainty, as previously identified, in order to accurately estimate and not understate the liability. This has been the basis for a commonly articulated view that revenues from this risk charge/margin should be recognized (earned) over the duration of the risk exposure period.

Elements of this concept of risk margins in insurance have always been implicitly included in insurance transactions and accounting in the U.S. This concept is also now being included in a more formal way in the work emerging on international insurance accounting standards. While the precise details have not yet been finalized, the basic preliminary concept currently being considered by both the International Accounting Standards Board and the International Association of Insurance Supervisors is that the reserve entered for both general purpose accounting and for regulatory reporting purposes should be the market value of the liability. In this context it is understood that the market value includes the value of the risk margin. The margins are released as the risk is released. In reporting the actual experience, there is a corresponding release of the risk coverage that has been provided during the covered period just ended, and this release continues to occur over the life of the risk exposure. Without these margins, the reserve liability would be understated. In addition, regulators impose additional margins beyond those described here to ensure solvency. Thus reserves contain a modest reflection of adverse deviation, while solvency margins provide for more extreme events. For these reasons insurance margins as part of the reserve liability should be a part of Treasury and IRS considerations as to the appropriate level of deductible reserves.

In addition, Section 3.03 (Page 9) of the Notice states: “If this concern is not satisfied, the Treasury Department and IRS may (i) permit a contract-by-contract apportionment of a stochastically-determined reserve, but with appropriate adjustments so that reserve reflects an expected value of the company's obligations (for example, by adjusting the CTE from 65 to 0, assuming that the chosen scenarios have a uniform probability distribution and the scenarios not chosen have a zero probability);”. The previous discussion on risk margins and risk aversion is also an example of what should be considered in the

determination of the required CTE level. Historically, regulators have estimated an appropriate reserve to be about one standard deviation from the expected value of a normally distributed risk distribution. A 65-70 CTE measure represents a margin of approximately one standard deviation.

III. Discussion of the Gross Premium Valuation Method

Section 4.02 (Pages 13-14) of the Notice – “In general, a gross premium valuation takes into account the present value of all cash flows under the contract, including future death benefits, future surrender benefits, premiums, future profits, and future expenses.”

The purpose of this section is to address these concerns that the gross premium valuation (GPV) methodology of Proposed Life PBR is a departure from traditional net premium reserve methodology used by US life insurance companies for generation of such reserves. While the assumptions utilized in a GPV are substantially different, the mathematical framework can be shown to have essentially the same structure.

If one compares the Commissioners’ Reserve Valuation Method (CRVM) with GPV, there is a significant similarity in the basic structure of the calculation.

The GPV reserve consists of (a) + (b) – (c), where:

- (a) is the present value of future benefits,
- (b) is the present value of future expenses, and
- (c) is the present value of future gross premiums.

The CRVM net premium reserve consists of (a) minus (b), where:

- (a) is the present value of future benefits, and
- (b) is the present value of future “net premiums,” where the net premium equals the gross premium minus a “loading for expenses.”

Regrouping the terms under the CRVM net premium formula results in:

- (a) Present value of future benefits, plus
- (b) Present value of future loadings for expenses, minus
- (c) Present value of future gross premiums.

Thus, while we recognize that final values will likely be different between the two methodologies, the framework is similar.

IV. Determination of Mortality Assumptions

Section 3.05 (Pages 10-11) of the Notice states: “The Treasury Department and IRS are concerned that determining an aggregate reserve stochastically and, after the fact, using the reserve so determined to map to one of a large number of NAIC approved mortality tables would not satisfy the requirement of section 807(d) (2) that the commissioners’ standard tables be used for purposes of determining the tax reserve for a contract.”

The above description of the process to determine the commissioners’ standard tables for the Proposed Life PBR appears to be inconsistent with the proposal originally recommended by the Academy Group and now included in the current NAIC exposure (i.e., section VM-20 of the proposed valuation manual). We would like to clarify and correct any misunderstanding of this process. To this end, it would be helpful to begin by summarizing the current process to determine the valuation mortality assumption under Proposed Life PBR. The determination of the mortality assumption can be described as a three step process:

- Determine the company’s credibility adjusted mortality rates⁵ that reflect a blend of actual company experience (to the extent credible) and an industry table. An objective “underwriting scoring process” has been developed as the basis to select the industry table that reflects the risks of the block of policies being underwritten.
- Include a provision in the credibility adjusted mortality rates to reflect the degree of uncertainty in the mortality rates determined in the first step.
- Apply an objective mapping process to select a unique commissioners’ standard table that is intended to produce a reserve amount that is equal to the reserve amount determined by using the credibility adjusted mortality rates (see further description of this mapping process in point 3 below).

The items that appear to need clarification or correction regarding the Treasury’s description of the process to determine the mortality assumption include the following:

1. The wording in Section 3.05 of the Notice quoted above states that the commissioners’ standard table to be used in the valuation is determined “after the fact” once the reserve is finalized. This implies that the actual mortality rates from the commissioners’ standard table are not used in the actual reserve calculation. However, this is not the case. The process to determine the commissioners’ standard table is done “before the fact,” that is, before the final reserve is calculated. Once the commissioners’ table is determined following the required procedure defined in Proposed Life PBR, then the table is used to calculate the minimum statutory reserve for both the deterministic reserve and the stochastic reserve.
2. The wording in Section 3.05 of the Notice also states that the result of the stochastic reserve calculation in Proposed Life PBR is used to determine the commissioner’s standard table. This is also not correct. The determination of the commissioners’ standard table is based on the results of an interim step (the “seriatim reserve” calculation) within the deterministic reserve calculation.
3. As mentioned above, the final step to determine the mortality assumption is to map the credibility adjusted mortality rates to a unique commissioner's standard table. This required mapping process is defined in VM-20 as follows.
 - a) Perform a calculation of what the seriatim reserve would be IF the mortality valuation assumption was set equal to the company’s credibility adjusted mortality rates.
 - b) Select the unique commissioners’ standard table that produces a seriatim reserve amount that is nearest to, but not less than, the amount determined in a) above.

While there is actuarial judgment involved in determining the company’s credibility adjusted mortality rates⁶, no company discretion is allowed in this mapping process. The company must use the unique commissioners’ standard table that satisfies the requirement set forth in VM-20, and only one such table will satisfy this requirement.

⁵ “Credibility adjusted mortality rates” is the term used in VM-20 to refer to the mortality rates resulting from blending the company's actual mortality experience with a standard industry mortality table. The relative weightings of the company's experience and the industry table depend on the degree of credibility of the company's experience using an actuarially acceptable credibility method.

⁶ Actuarial judgment is needed to determine the provision for uncertainty, and the actuary is allowed to use judgment to select an actuarially accepted credibility method. But the determination of the company’s credibility adjusted mortality rates must be tied to the underlying credible experience of the company, and an objective “underwriting scoring process” must be used to select the industry table to be used for credibility blending. In addition, specific limits and constraints on the degree of actuarial judgment that is allowed in the determination of these credibility adjusted mortality rates are still being developed by the NAIC. See section I for further discussion.

4. The requirement in VM-20 to map to a unique commissioners' standard table presumes that there is a set of approved commissioners' standard tables that represent the range of standard mortality risks in the current life insurance market. It is important to emphasize that regardless of the number of commissioners' standard tables, the mapping rules point to a unique commissioners' standard table. The company does not have the discretion to select the table they may wish to use under this mapping process.

In conclusion, this section is a technical response to a specific provision stated in the Notice. The Academy Group expects there may be yet other important issues to address in the mortality-determination process.

V. Auditing Principle-Based Reserves

Section 3.08 (Page 12) of the Notice stated: "As a matter of tax administration, the Treasury Department and IRS are concerned that the degree of discretion that would be vested in taxpayers to determine the CTE amount (under Proposed AG VACARVM) or the stochastic reserve (under Proposed Life PBR) could render those amounts difficult or impossible for examiners to audit."

It is hoped that the preceding discussions on assumption categories, the methodologies used in determining assumptions and the actuarial discipline in setting assumptions provides clarification as to the degree of discretion that would be used to determine reserves within PBR. While PBR will create additional complexity, the selection of assumptions is not an unfettered process. Additionally, there are full documentation and disclosure requirements to enable validation of the assumptions and methodology by peer reviewers, outside auditors and state examiners. State regulatory auditors will need to audit these calculations and must develop procedures and processes to do so as well.

CONCLUSION

The Academy Group welcomes the opportunity to meet with the Treasury and IRS to discuss its comments in more detail on these and other issues and questions contained in the Notice. The Academy Group believes that a meeting would assist us in developing additional comments, and may assist the Treasury and IRS in developing work on principle-based variable annuities and life insurance reserves.

Sincerely,

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American Academy of Actuaries