



May 9, 2023

Rachel Hemphill  
Chair, Life Actuarial Task Force (LATF)  
National Association of Insurance Commissioners (NAIC)

Re: Proposed Changes to VM-20 outlined in APF 2023-06

Dear Chair Hemphill,

The American Academy of Actuaries<sup>1</sup> Life Reserves Work Group (LRWG) appreciates the opportunity to comment on the April 20 exposure of APF 2023-06. This letter provides comments in three parts, addressing the following:

1. Inconsistency in the definition of the prefunding ratio in the secondary guarantee (SG) net premium reserve (NPR) calculation
2. Proposed change to apply the prefunding ratio to the expense allowance (EA) in the SG NPR calculation
3. Proposed change to impose a cash surrender value (CSV) floor on the scenario reserve

### **Part 1: Inconsistency of the prefunding ratio in the SG NPR calculation**

An inconsistency in the calculation of the prefunding ratio for a shadow account secondary guarantee and a cumulative premium secondary guarantee used in SG NPR calculations was observed while reviewing proposed changes to the NPR with respect to the expense allowance, as discussed in Part 2 of this comment letter below.

Based on the differences in the current definition of actual secondary guarantee (ASG)<sup>2</sup> and fully funded secondary guarantee (FFSG) for the two SG designs, an otherwise equivalent product in terms of required premiums and guaranteed benefits can result in a different premium prefunding ratio and SG NPR.

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<sup>1</sup> The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted 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.

<sup>2</sup> As defined in VM-20 Subsection 3.B.1.b and 3.B.1.c.

An example is provided in Appendix A, which illustrates the differences in prefunding ratio under a scenario where the shadow account secondary guarantee builds zero value at the end of each year (i.e., the ASG and the prefunding ratio are always zero). It is intentionally simplified to highlight the potential difference between the prefunding ratios given the same funding pattern. It assumes level shadow account charges equal to the required premium under the cumulative premium design (and no interest or other charges).

A second, slightly less simplified example is included that assumes an increasing shadow charge but also illustrates differences between the two approaches.

The LRWG has contemplated potential options to bring consistency to the prefunding ratios used across these two secondary guarantee types. More time is needed to analyze options and understand potential implications to Section 3 of VM-20.

In the spirit of consistency, other requirements of the Valuation Manual and VM-20 that appear inconsistent across secondary guarantee types were identified:

- Only secondary guarantees in the form of a specified or cumulative premium may be eligible to be classified as a “non-material secondary guarantee” (per corresponding definition in VM-01) if certain criteria are met and could be exempt from the Deterministic Exclusion Test (per Subsection 6.B.1.a of VM-20). All shadow account designs are therefore deemed to not pass the DET.
- Subsection II.G.3.a of the Valuation Manual states that policies with secondary guarantees that are material are excluded from the Life PBR Exemption. Currently, only specified premium and cumulative premium secondary guarantees that are classified as non-material are eligible for the Life PBR Exemption (i.e., shadow account designs are ineligible for the Life PBR Exemption).

## **Part 2: Applying the prefunding ratio to the expense allowance**

The following are considerations applicable to evaluating the proposed application of the prefunding ratio to the expense allowance in the calculation of the secondary guarantee NPR:

- Acquisition expenses paid by the issuer themselves (irrespective of the expense reserve) are not expected to change based on the level of secondary funding by the policyholder
- The change is likely to have a material impact for existing and new business

However, if a desired outcome is to be consistent with the Base NPR calculation,<sup>3</sup> a potential alternative to consider would be replacing the FFSG with a level secondary guarantee premium amount (LSG)<sup>4</sup> in the prefunding ratio and apply this ratio to the EA only.

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<sup>3</sup> VM-20 Section 3.B.5.d.

<sup>4</sup> As defined in VM-20 subsection 3.B.1.d.

This application resembles the “Base funding ratio,” which measures current account value to expected account value assuming payment of a level premium. The current definition of the prefunding ratio, based on the FFSG, would still be applied to the net single premium (NSP).

*Simplified formula for the SG NPR (**bold updated**)*

$$\text{Min}\left(\frac{ASG_{x+t}}{FFSG_{x+t}}, 1\right) * NSP_{x+t} - \text{Min}\left(\frac{ASG_{x+t}}{LSG_{x+t}}, 1\right) * EA_{x+t}$$

### **Part 3: Imposing a CSV floor on the scenario reserve**

The LRWG believes that the following aspects should be considered upon evaluating whether to implement an aggregate CSV floor on the scenario reserve:

- VM-20 already has a CSV floor on the NPR that guarantees the final reported reserve will be in excess of the CSV on a seriatim basis, so an additional CSV floor is not necessary.
- Imposing a CSV floor on an interim component within a risk-based reserve calculation is inconsistent with both the theory and purpose of the calculation.

The remainder of this Part 3 provides additional rationale for the points listed above.

- The Stochastic Reserve (SR) is a risk-based reserve calculation that is attempting to capture all material risks that impact the ability of the company to have sufficient assets to pay policyholder obligations. The risk of policyholders surrendering their policies for cash is covered directly within the SR calculation via a prudent estimate assumption for surrenders. Covering surrender risk by imposing a CSV floor value on the scenario reserve is not necessary because the provision for the risk of policyholders surrendering their policies for cash is covered by the prudent estimate surrender assumption.

A CSV floor on a non-risk-based reserve, such as the pre-PBR formulaic reserve, may be necessary because a provision for surrender risk is not explicitly incorporated in the formulaic reserve calculation. But such a floor may not be necessary for a risk-based reserve calculation that incorporates an explicit prudent estimate assumption for surrender risk.

- VM-20 includes a Pretax Interest Maintenance Reserve (PIMR) adjustment that decreases/increases the modeled reserve (DR and SR) by the amount of the existing positive/negative PIMR allocated to the group of policies. This final adjustment to the CTE<sup>5</sup> 70 amount for the SR at time 0 (the valuation date) is mathematically equivalent to projecting the amortization of the PIMR over time in each scenario reserve calculation as a component of investment income. This mathematical equivalence is no longer in place for a scenario reserve amount that is floored by the CSV of the policies.

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<sup>5</sup> Conditional tail expectation

- An additional CSV floor on the scenario reserve increases the SR above the CTE 70 amount. The CTE 70 calculation is based on cash flows; adding a CSV floor could be viewed as a balance sheet floor and not a cash flow item. When the CSV floor comes into play for a scenario, it increases the scenario reserve above the CTE 70 amount determined based on cash flows using prudent estimate assumptions.

In summary, comparing the resulting reserve amount of a policy to the policy's CSV is not a risk-based component of a PBR reserve, and instead may well be viewed as a regulatory guardrail. The risk of surrender is covered by a prudent estimate assumption, so a CSV floor increases the reserve beyond the amount intended to cover such risk. And incorporating a CSV floor on each scenario reserve distorts the current PIMR adjustment when the floor comes into play. For these additional reasons, we advise regulators to consider these aspects upon determining whether to adopt the changes in the proposed amendment.

The Life Reserves Work Group appreciates your attention to the issues raised in this letter and looks forward to discussing them further with you. Should you have any questions or comments in response to this letter, please contact Amanda Barry-Moilanen, life policy analyst (barrymoilanen@actuary.org).

Sincerely,

A handwritten signature in black ink, appearing to be 'Dylan Strother', with a stylized loop and a horizontal line extending to the right.

Dylan Strother, MAAA, FSA  
Chairperson, Life Reserves Work Group

Angela McShane, MAAA, FSA  
Vice Chairperson, Life Reserves Work Group

American Academy of Actuaries

## Appendix A.

For a cumulative premium secondary guarantee

- Subsection 3.B.1.c of VM-20 states that the ASG is the accumulation of actual premiums paid to date
- Subsection 3.B.1.b states that the FFSG is the amount of cumulative premiums required to fully fund the secondary guarantee

For a shadow account secondary guarantee

- Subsection 3.B.1.c states that the ASG at any time is defined as the actual shadow account fund value at that time
- Subsection 3.B.1.b states that the FFSG is the minimum shadow account fund value that would fully fund the secondary guarantee at that time

The prefunding ratio is the ratio of the ASG and the FFSG at the valuation date.

The examples below illustrate a 10-year secondary guarantee for a cumulative premium and a simplified shadow account design. They use the definitions above assuming the accumulation rate for the cumulative premium equals zero.

### *Example 1—Level funding and equivalent level shadow charges*

t	Premium paid	Req Prem/ Shadow charge	Cumulative Premium			Shadow Account		
			ASG	FFSG	Prefunding ratio	ASG	FFSG	Prefunding ratio
1	5,500	5,500	5,500	55,000	10%	-	49,500	0%
2	5,500	5,500	11,000	55,000	20%	-	44,000	0%
3	5,500	5,500	16,500	55,000	30%	-	38,500	0%
4	5,500	5,500	22,000	55,000	40%	-	33,000	0%
5	5,500	5,500	27,500	55,000	50%	-	27,500	0%
6	5,500	5,500	33,000	55,000	60%	-	22,000	0%
7	5,500	5,500	38,500	55,000	70%	-	16,500	0%
8	5,500	5,500	44,000	55,000	80%	-	11,000	0%
9	5,500	5,500	49,500	55,000	90%	-	5,500	0%
10	5,500	5,500	55,000	55,000	100%	-	-	0%

Commentary:

- The two designs provide for the same benefits and both product designs require payment of 5,500 annually to keep the policy from lapsing
- The ASG and the prefunding ratios for the shadow account design are zero due to the funding pattern; however, that same funding pattern produces an increasing prefunding ratio on the cumulative premium design

*Example 2—Level funding and increasing shadow charges*

t	Premium paid	Req Prem/Shadow charge	Cumulative Premium			Shadow Account		
			ASG	FFSG	Prefunding ratio	ASG	FFSG	Prefunding ratio
1	5,500	1,000	5,500	55,000	10%	4,500	54,000	8%
2	5,500	2,000	11,000	55,000	20%	8,000	52,000	15%
3	5,500	3,000	16,500	55,000	30%	10,500	49,000	21%
4	5,500	4,000	22,000	55,000	40%	12,000	45,000	27%
5	5,500	5,000	27,500	55,000	50%	12,500	40,000	31%
6	5,500	6,000	33,000	55,000	60%	12,000	34,000	35%
7	5,500	7,000	38,500	55,000	70%	10,500	27,000	39%
8	5,500	8,000	44,000	55,000	80%	8,000	19,000	42%
9	5,500	9,000	49,500	55,000	90%	4,500	10,000	45%
10	5,500	10,000	55,000	55,000	100%	-	-	0%

Commentary:

- The two designs provide for the same benefits; both designs are funded at 5,500 annually
- Prefunding ratio for cumulative premium design is the same as in Example 1, unimpacted by difference in prefunding between the two examples
- The two designs are equally prefunded but again result in different prefunding ratios