PBR Boot Camp: VM-31 as Seen by Regulators

December 13, 2024—12 to 1:30 p.m. EST

Academy **Webinar**

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Introductions

- Moderator:
    - Thomas Reedy, MAAA, FSA—California

- Speakers and Q&A:
    - James Beall, MAAA, FSA—California
    - Seong-min Eom, MAAA, FSA, PRM—New Jersey
    - Rachel Hemphill, MAAA, FSA, FCAS—Texas
    - Elaine Lam, MAAA, FSA, CERA—California
    - Ben Slutsker, MAAA, FSA—Minnesota

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Notice

This presentation provides examples of the findings from the National Association of Insurance Commissioners (NAIC) Valuation Analysis (E) Working Group's (VAWG's) review of the 2021 VM-20 Reserves Supplement in the Annual Supplement Blanks and VM-31 Principle-Based Reserve (PBR) Actuarial Reports.

The VM-20 Reserves Supplement is publicly available. The PBR Actuarial Reports are considered to be confidential information under Section 14A of the Standard Valuation Law (Model #820) and may only be disclosed by a commissioner pursuant to Section 14B of Model Law #820.

This presentation does not contain any company-specific or other company-identifiable information, and any information contained herein has been aggregated in order to protect the confidentiality of the information.

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Agenda

1. Life PBR Summary Statistics
2. VM-31 PBR Report Observations
   - For VM-20 (Life) and VM-21 (VA) in common
   - For VM-20 (Life) specific
   - For VM-21 (VA) specific
   - Margins
3. VM-31 for VM-22 (Non-Variable Annuity) PBR
4. VM-30 Actuarial Memorandum vs. VM-31 PBR Reports
5. New VM Amendments for 2024 and 2025
6. Q&A

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Life PBR Summary Statistics

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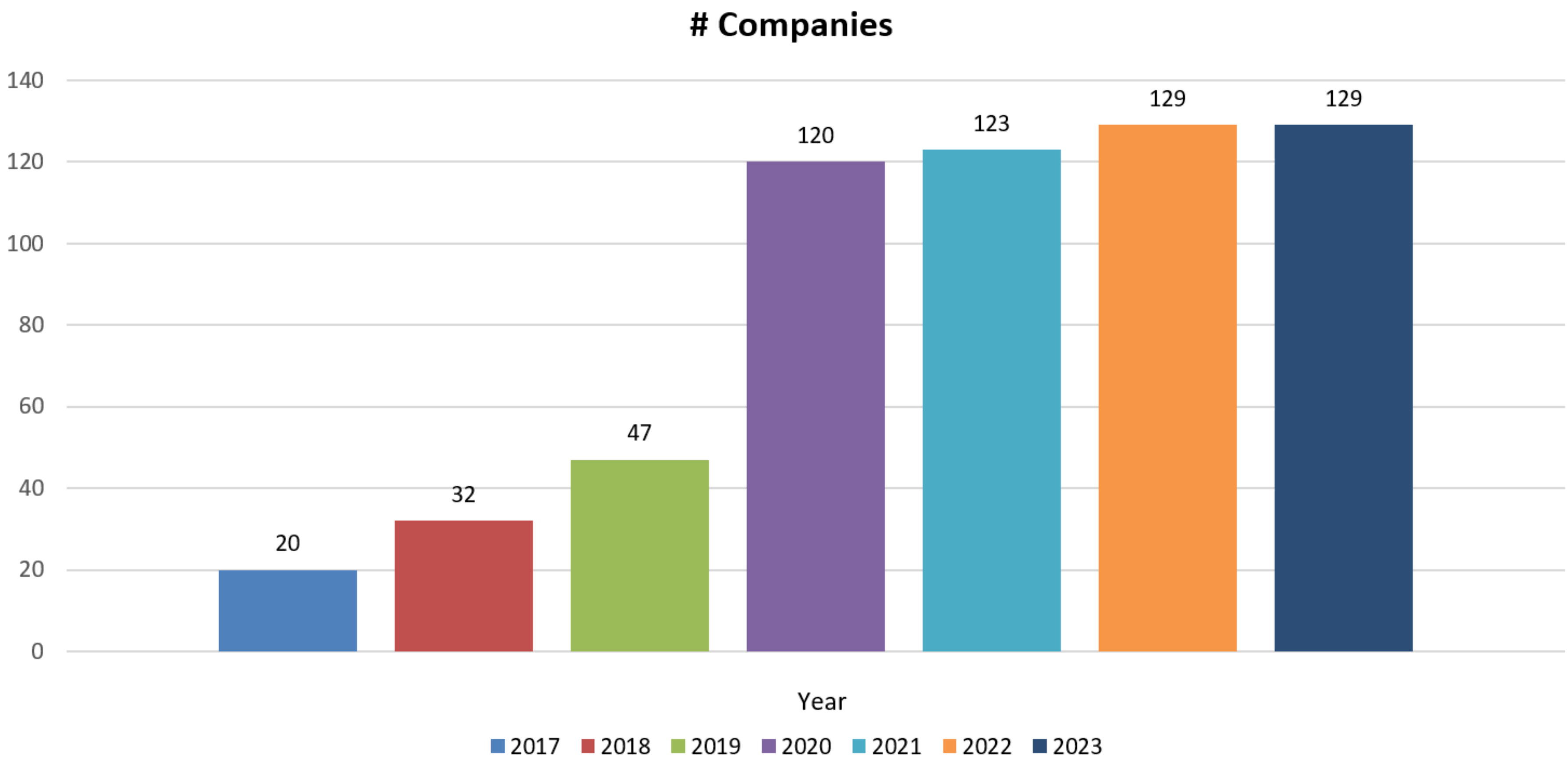
2023 Life Insurance PBR Statistics*

Number of Life PBR Companies by Year



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2023 Life Insurance PBR Statistics*

Amount of Life PBR Reserves by Year

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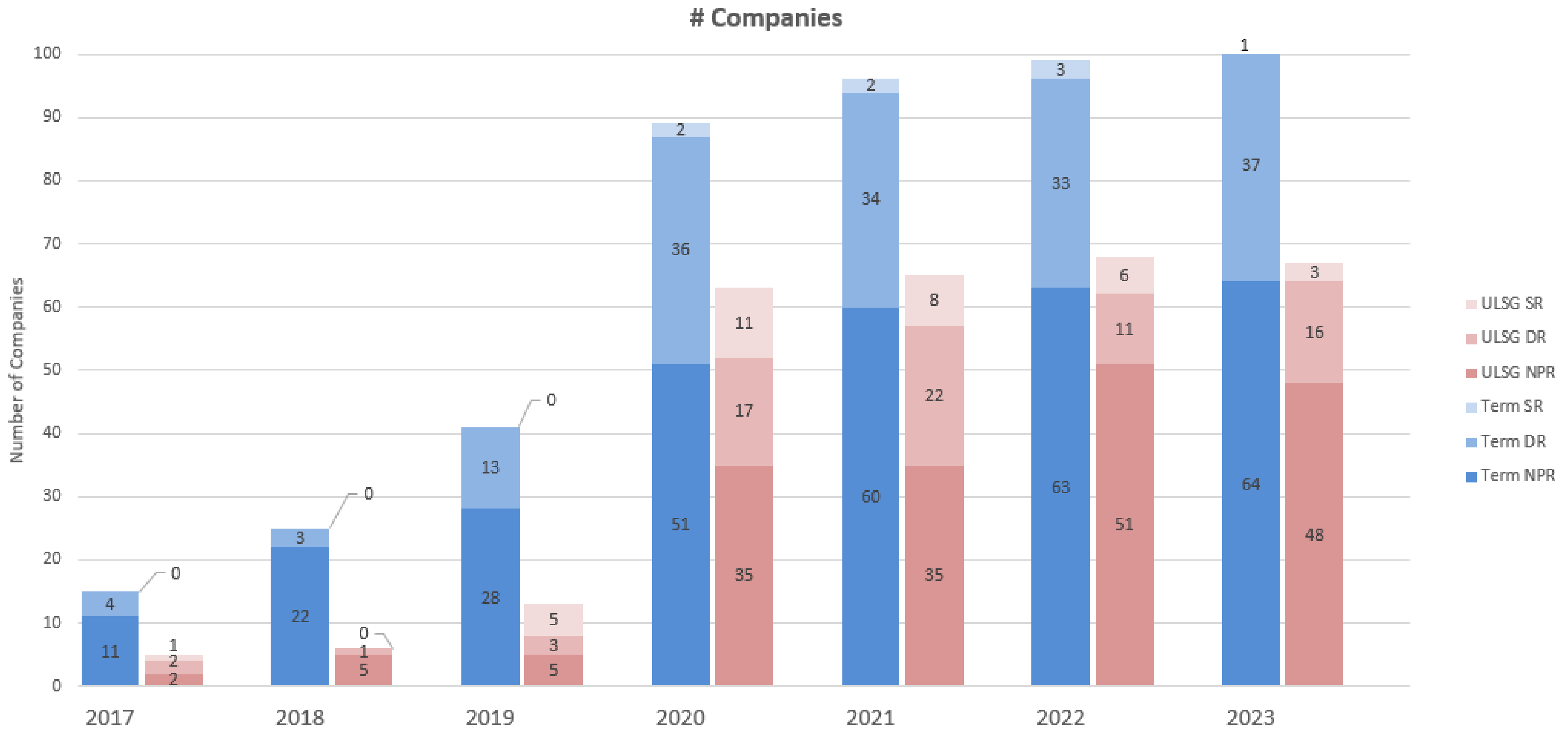
2023 Life Insurance PBR Statistics*

of Companies by Dominant Reserve (post-reinsurance-ceded)



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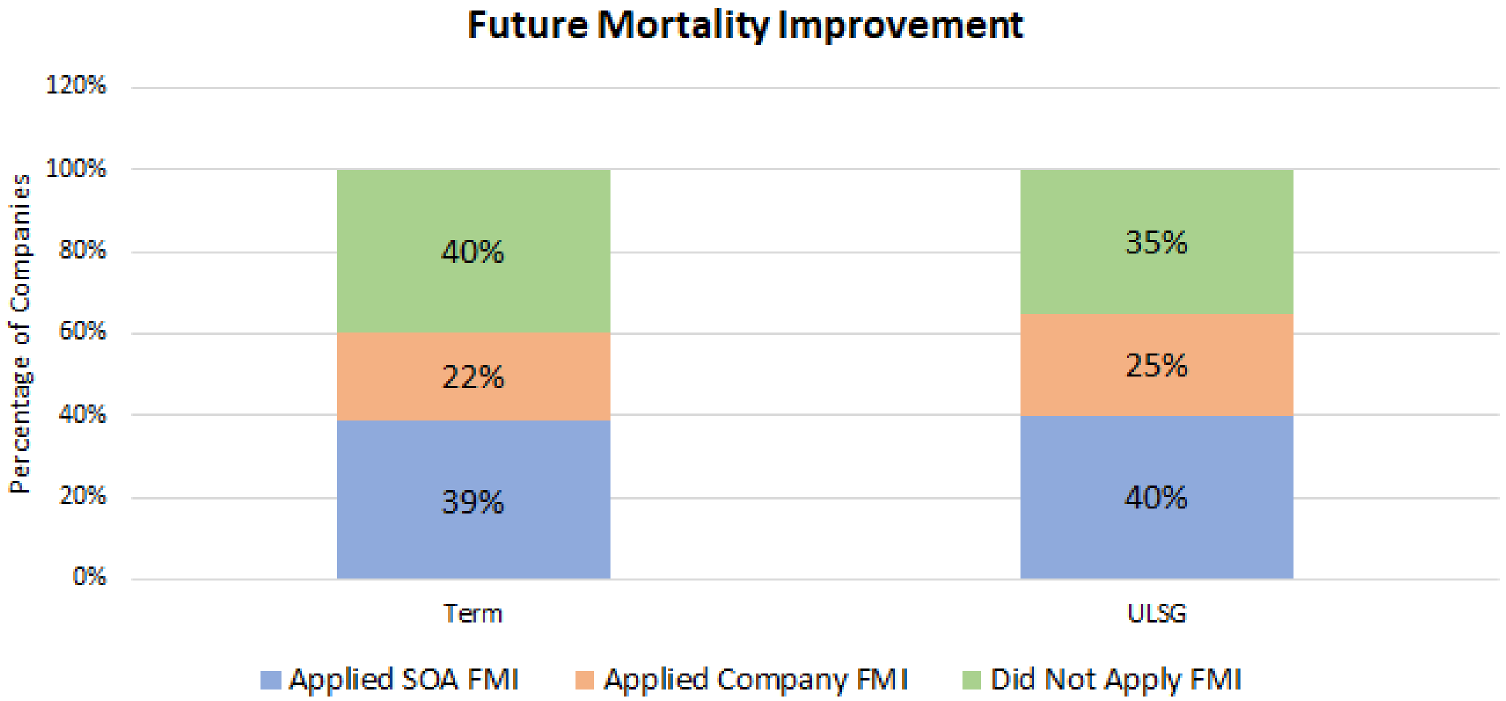
Future Mortality Improvement (2023 Snapshot)



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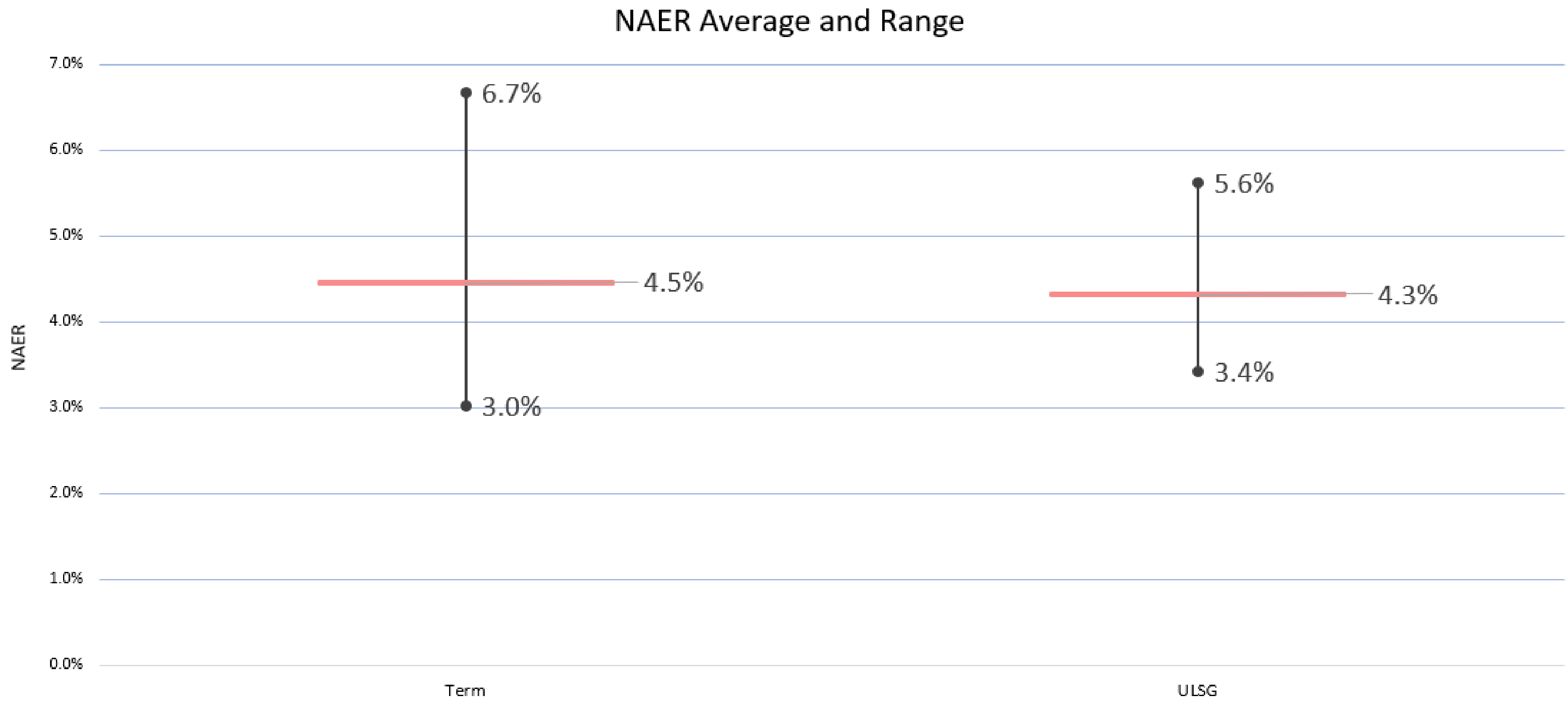
NAER Average and Range (2023 Snapshot)



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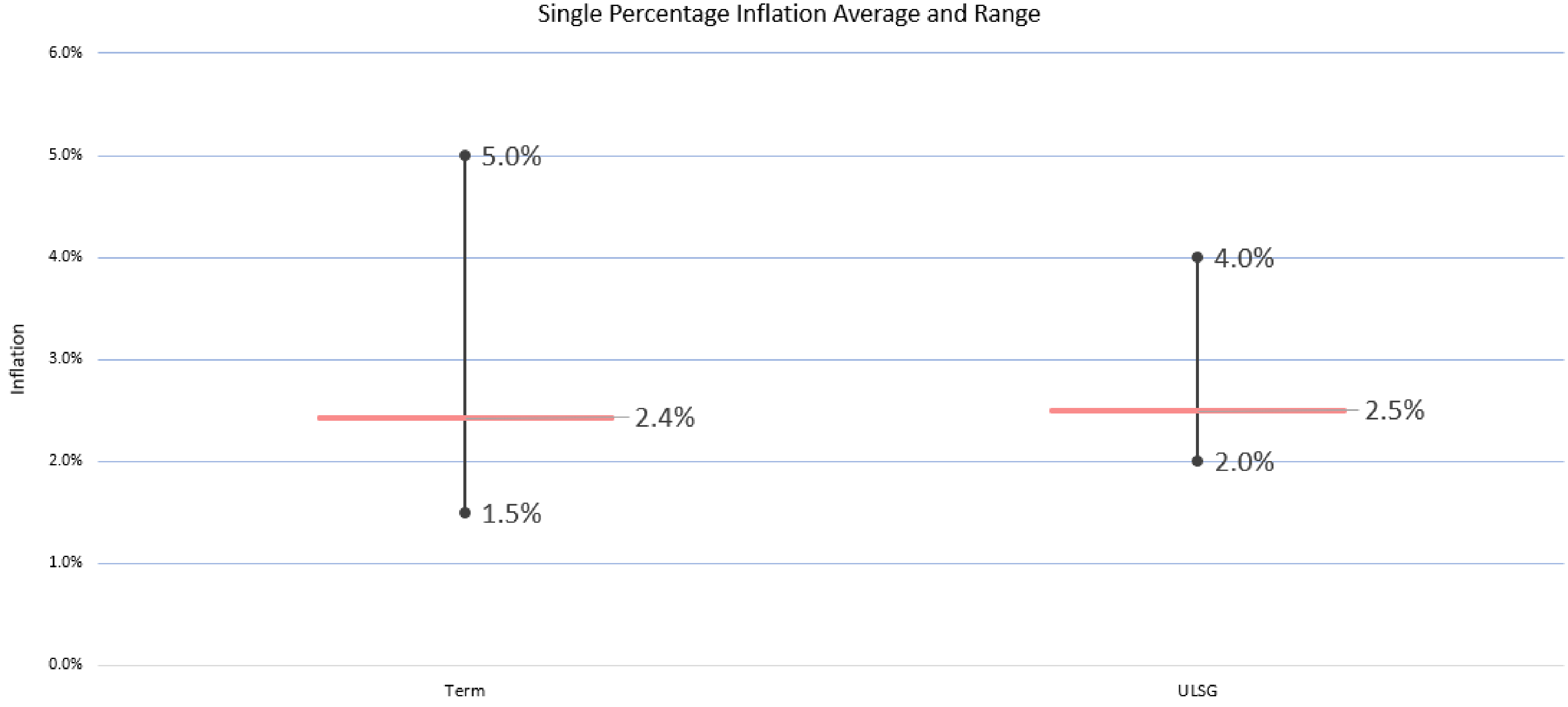
2023 Life Insurance PBR Statistics*

Average and Range for Flat Expense Inflation Assumption



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VM-31 PBR Report Observations: Life and VA

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Ben Slutsker, MAAA, FSA—Minnesota

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Interest Rate Environment

- Rates rose sharply in late 2021 and remain somewhat elevated, but seem to be trending back downward
- Best practice for VM-31 Reports:
  - Address impact of changing interest rate environments, including commentary on impact to PBR valuation. For example:
    - Any assumptions or margins being monitored more closely, or being flagged for review, due to the changing interest rates?
    - Any additional analysis performed in light of changing interest rates, such as more granular A/E analysis or sensitivity testing?
    - Any asset considerations, such as duration mismatches or disintermediation risk?

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Model Validation

- Model validation is required for both Life and VA Reports:
  - Life Report—VM-31 Section 3.D.2.e
  - VA Report—VM-31 Section 3.F.2.c
- Best practice for VM-31 Reports:
  - Include numerical static and dynamic validation results, and commentary on the results
  - For dynamic validation, include at least one year of overlap comparing actual and model results for the same year
  - Lack of validations should be documented and justified
    - Immateriality is not sufficient rationale
    - Validation framework should be in place <u>before</u> block becomes material

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Expense Inflation

A dynamic expense inflation assumption is still considered best practice, but:

- Should incorporate a short-term floor to recognize current inflation
- Should also incorporate a long-term floor

Inflation may be moderating, as interest rates appear to be trending downward. Nevertheless:

- Any changes to the expense inflation assumption need appropriate justification

In general, need to provide discussion of the data, sources, methods, and judgment used to develop the expense inflation assumption in the VM-31 Report.

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Future Hedging Strategies

APF 2020-12 for 2023 VM added and updated definitions in VM-01 for:

- Future Hedging Strategy (FHS)
- Clearly Defined Hedging Strategy (CDHS)
- Hedging Transactions

Companies must reflect all future hedging strategies for PBR, whether CDHS or not

- If not CDHS, must reflect additional error (for VM-21) or residual risk (for VM-20)

Certifications must reflect updated FHS language

- Certification by Investment Officer on Investments (VM-31 Section 3.D.14.a; VM-31 Section 3.F.16.a)
  - "… including any FHS supporting the policies, is consistent…"
  - "… that documentation of the CDHS attributes for any FHS supporting the policies are accurate."
- Certification by Qualified Actuary on Investments (VM-31 Section 3.D.14.b; VM-31 Section 3.F.16.b)
  - "… modeling of any FHS supporting the contracts is consistent with the company's actual FHS…"

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Questionnaire Responses and Significant Changes

- Use responses to regulator questions to improve future PBR Reports
  - Regulator questions were sourced from areas of the VM-31 Report that were unclear or ambiguous
  - Pursue improvements to future VM-31 Reports based on the questions and responses, even without explicit feedback from regulators
  - Can help avoid additional questions on the same topic or repeats of the same question in the future
- Explain significant changes to the VM-31 Report
  - For example, if prior disclosures or requested additional explanations are removed from the VM-31 Report
  - Such changes automatically prompt questions from regulators

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VM-31 PBR Report Observations: Life-specific

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Max Net Spread Adjustment Factor

- Max Net Spread Adjustment Factor is a cap on net spread for starting assets
  - Compares the PBR spread less defaults less investment expenses for all assets in aggregate compared to a BBB hypothetical public corporate bond with 10bp investment expenses
  - Hold default cost equal to any excess of portfolio net spread over hypothetical asset

- Year-over-year changes from a zero Max Net Spread Adjustment Factor to a positive amount should be explained in VM-31 Reports
  - After years of reporting zero for the adjustment, multiple submissions showed a positive amount at year-end 2023 reporting, possibly due to changes in the spread environment
  - If this number changes from zero to a positive amount due to increases in the modeled net spread for company assets, company submissions should explain this change

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Exclusion Testing Changes

- Explain year-over-year changes to the Stochastic Exclusion Ratio Test (SERT) or a scenario-testing-based stochastic exclusion testing (SET) approach
  - Even if passing both last year and this year, if a new scenario produces the highest reserve for this year or the ratio notably changes (e.g., >0.5%), then explain results
- For example, let's say low rate, down equity scenario produces the highest reserve for SERT last year; high rate, up equity scenario does this year
  - Even if still passing, the company should explain what is changing the risk profile of the block of policies being tested

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ULSG Lapse Assumption

- PBR permits aggregating UL contracts with material and non-material secondary guarantees for the modeled reserve calculation

- A policy with a shorter/weaker secondary guarantee (e.g., for 10–15 year length) may not be lapse-supported whereas a longer/stronger secondary guarantee (e.g., lifetime length) may be lapse-supported

- In this case, reflect different lapse assumptions/margins even if aggregating
  - In particular, if an aggregated ultimate lapse rate is 5% on a large UL block, but there is a small subset of lifetime ULSG that has experienced an ultimate lapse rate of 1%, it is not appropriate to set the 5% as a prudent estimate for such contracts
  - Margins for the two types of contracts may also need to be in opposite directions

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Is reflecting Future Mortality Improvement (FMI) prudent?

- Many companies assume that reflecting future mortality improvement for life contracts lowers PBR reserves, but this is not always the case

- If not reflecting FMI, should demonstrate that this does not understate reserves
  - Can refer to a sensitivity, prior year result, and/or description of lapse-supportedness/risk profile using quantitative evidence

- No FMI permitted on simplified issue or guaranteed issue

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COVID Considerations

Some reports have pointed to elevated mortality following COVID that has not yet receded for certain age groups

Explain how this was considered in setting the mortality assumption and whether any additional risk is reflected in case this excess mortality does not disappear

- Provide evidence through publications or other sources to justify assumption if not reflecting the impact from COVID

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VM-31 PBR Report Observations: VA-specific

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GLB Lapses

- Do variable annuity contracts with guaranteed living benefits reflect the same surrender assumptions for contracts that have utilized the benefit vs. contracts that haven’t?

- If yes, provide experience on whether similar surrender activity has been observed between the two

- May consider a separate lapse assumption once a contract has utilized the guaranteed benefit, especially if in-the-money

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Structured Spread Assumptions

- Although some Structured Asset spreads have been very high in recent historical years, it may not be appropriate to use a historical average

- For example, using the last 3-5 years of very favorable spreads for a structured asset does not necessarily reflect economic cyclicality or the distribution of risk

- Set prudent assumptions based on long-term expectations, not short-term gains

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Explicit vs. Implicit Method

Fundamental Characteristics of Modeling Approaches:

1. Explicit Method
   - Hedging positions and resulting cash flows are included in the stochastic cash-flow model used to determine the scenario reserve

2. Implicit Method
   - The effectiveness of the current hedging strategy on future cash flows is evaluated, in part or in whole, outside of the stochastic cash-flow model

Under either method, the ultimate effect of the current hedging strategy (including currently held hedge positions) on the SR needs to recognize all risks, associated costs, imperfections in the hedges and hedging mismatch tolerances associated with the hedging strategy.

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Modeling Future Hedging Strategies

Options for companies with one or more of the following future hedging strategies supporting the contracts:

➢ For index credits future hedging strategy with hedge payoffs that solely offset index credits associated with index crediting strategies:

- Include cash flows from future hedge purchases or rebalancing of existing hedge assets
- Include existing hedging instruments that are held for offsetting the index credits in the starting assets
- Reflect an index credit hedge margin for 'best efforts' and the 'adjusted' runs
  - Margin reduces index credit hedge payoffs
  - Margin shall be at least 1.5% multiplicative
  - Margin shall be justified by sufficient and credible company experience and account for model error
  - If no sufficient and credible company experience, assume a minimum 20% margin

Note: If a company has a more comprehensive hedge strategy combining index credits with guaranteed benefit and/or other risks (e.g., full fair value or economic hedging), no portion of this hedge strategy is eligible for this treatment.

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Modeling Future Hedging Strategies (continued)

➢ For a company with one or more future hedging strategies supporting the contracts that do not solely offset indexed interest credits:

- Include appropriate costs and benefits of hedging instruments in projections to determine stochastic reserve (SR)
- Assess the accuracy of the hedge modeling, for example by back-testing
- Determine SR as the weighted average of the following:

  CTE70 (“best efforts”), which represents the projection of all hedge cash flows, including future hedge purchases

  and

  CTE70 (“adjusted”), which only includes hedged assets as of the valuation date and only future hedge purchased associated only with index credits.

  where the weights reflect an error factor (E-Factor)

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Modeling Future Hedging Strategies (continued)

For a company that does not have a future hedging strategy supporting the contracts:

- The company shall not consider the cash flows from any future hedge purchases or any rebalancing of existing hedge assets in its modeling, since they are not included in the company's investment strategy supporting the contracts.

- Existing hedging instruments that are currently held by the company in support of the contracts falling under the scope of these requirements shall be included in the starting assets.

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E-Factor Derivation and Documentation

- The calculation of the reported SR is the following:

  SR = CTE70 (best efforts) + E × max[0, CTE70 (adjusted) – CTE70 (best efforts)]

  where E is the error factor
- E can range from 5% to 100% based on company view of potential error resulting from sophistication of cash flow model and its ability to properly reflect the parameters of the hedging strategy
- The better the ability of model to capture all risks, the lower the value of E
- Company shall conduct a back-test to assess performance of model (including the determination of E) using at least the most recent 12 months of experience.

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E-Factor Derivation and Documentation (continued)

If 12 months experience not available, set E to a value that reflects amount of experience available and degree and nature of any changes to the hedge program

- If material change in strategy, < 12 months experience, and no robust mock testing: Set E = 1.0
- If material change in strategy and < 3 months experience: Set E = 1.0
- If there is an introduction of hedging for a newly introduced product or acquired block of business and robust mock testing occurs: Set E >= 0.3
- If material change in strategy, < 3 months experience, and with robust mock testing: may Set < 1.0 with regulatory approval
- If change in strategy is a minor refinement, E may be < 1.0
- If E < 1.0, then there should be very robust documentation of all future hedging strategies
- The less documentation, the higher value of E, with a cap of 1.0

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Margins and Lag

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Margins for Lack of Relevance

- Higher margin is expected when the experience data has less relevance or lower credibility
  1. In general, material risks require margins
  2. Have seen margins ranged from 2% to 10%
  3. Take into account the impact of the margins to the assumption—not only the size of the margin itself but also the impact to the assumption after the margin is applied (additive vs. multiplicative)
- Justification for the experience data that the company is using to set the assumption
  1. Historical variability of the experience can also impact the size of margins (ASOP No. 52, section 3.4.6 Determining Assumption Margins—the actuary should reflect the degree of risk and uncertainty in that assumption in determining the magnitude of such margin)
- Comparison with prior year's margins
  1. If the company has more credible and relevant experience and if different margin is used for the assumption
  2. If approach to the baseline assumption or overall company approach to the assumption has changed
- Provide explanation or justification of the margin, and support of approach in the VM-31 Report

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Mortality Margin on Substandard/Converted Policies

- Consider excess mortality from substandard or converted policies
  1. Explain the method to consider excess mortality and support of the approach
  2. Disclose if any modifications were made to the industry basic mortality table for converted or substandard policies
  3. Experience from the substandard or converted policies may not be credible: Additional margin may be needed due to the relatively smaller size of the policies
- Disclose any additional conservatism added to the converted/substandard policies

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Liability Valuation Date Lag

- Net premium reserve (NPR) needs to be calculated based on policies inforce as of the valuation date
- Stochastic reserve (SR) or deterministic reserve (DR) can be calculated based on the date prior to the valuation date—up to three months prior to the valuation date
    1. Disclose dates used for each item—policies inforce, starting assets, and starting yield curve, etc.
    2. Include the method to adjust the reserves to the valuation date
    3. Provide justification that the produced reserves are not materially less than the reserves calculated as of the valuation date
    4. Disclose the impact of the valuation date lag—impact to the inforce data or impact from the change of the economic condition

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Disclosures

Need to provide explanation, justification, and support for all:

1. Material assumption changes
2. Methodology changes

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VM-31 for VM-22 (Non-Variable Annuity) PBR

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VM-31 Disclosures for VM-22 PBR

- VM-22 PBR = Non-Variable Annuity PBR Requirements
  - Target effective date is 1/1/2026, with optional transition to 1/1/2029
  - Similar to VM-20 (life insurance) and VM-21 (variable annuities), disclosure requirements will be in VM-31

- Build new requirements on top of VM-31 Variable Annuity Requirements (i.e., VM-21 disclosures)
  - "VA Summary Report" → "Annuity Summary Report"
  - "VA Report" → "Annuity Report"
  - Keep variable annuities and non-variable annuities in separate sub-reports

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VM-31 Disclosures for VM-22 PBR

- Exclusion Testing
  - Scope of policies, type of test, demonstration, and support (similar to VM-20 disclosures)
  - Cover additional disclosures for the deterministic certification option and automatically passing the stochastic exclusion test

- Dynamic Lapses
  - Both tabular and graphical presentation of dynamic lapses across the varying factors

- Non-Guaranteed Elements (NGE)
  - Similar to VM-20 NGE disclosures, but applied to VM-22 (and also to VM-21)
  - Focus on index parameters and rider charges (rather than COIs)
  - Disclosure for the margin assumed on non-guaranteed elements

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VM-31 Disclosures for VM-22 PBR (continued)

- Hedging
  - Includes same disclosures that have been adopted for hedging programs that support index credits on VM-21
  - Modeled error must be historically supported and no lower than a floor equal to 1.5% of interest credited

- Contract Loans
  - Description of how contract loans are modeled, including both explicit and implicit modeling of loans

- Riders and Supplemental Benefits
  - Summarize list of riders and reserve methodology for each
  - Covers VM-21 and VM-22

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VM-22 Reserves Supplement Blank—Part 1A

	Prior Year 1 Reported Reserve in Excess of Cash Surrender Value	Current Year 2 Reported Reserve in Excess of Cash Surrender Value
1. Post-Reinsurance-Ceded Reserve[1]		
1.1. Fixed Annuities Deferred without Guaranteed Living Benefit		
1.2. Indexed Annuities Deferred without Guaranteed Living Benefit		
1.3. Individual Immediate and Deferred Income Annuities and Annuitizations		
1.4. Structured Settlements		
1.5. Pension Risk Transfer and Group Payout Annuities and Annuitizations		
1.6. Longevity Reinsurance		
1.7. Fixed Annuities Deferred – with Guaranteed Living Benefit		
1.8. Indexed Annuities Deferred – with Guaranteed Living Benefit		
1.9. Aggregate Write-Ins for Other Products		
2. Total Post-Reinsurance-Ceded Reserve (Sum of Lines 1.1 through 1.9)		
3. Pre-Reinsurance-Ceded Reserve		
3.1. Fixed Annuities Deferred without Guaranteed Living Benefit		
3.2. Indexed Annuities Deferred without Guaranteed Living Benefit		
3.3. Individual Immediate and Deferred Income Annuities and Annuitizations		
3.4. Structured Settlements		
3.5. Pension Risk Transfer and Group Payout Annuities and Annuitizations		
3.6. Longevity Reinsurance		
3.7. Fixed Annuities Deferred – with Guaranteed Living Benefit		
3.8. Indexed Annuities Deferred – with Guaranteed Living Benefit		
3.9. Aggregate Write-Ins for Other Products		
4. Total Pre-Reinsurance-Ceded Reserve (Sum of Lines 3.1 through 3.9)		
5. Total Reserves Ceded (Line 4 minus Line 2)		

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VM-22 Reserves Supplement Blank—Part 1B

	Current Year															
	SECTION A							SECTION B						SECTION C		
	1 Cash Surrender Value	2 Prescribed Projection Amount	3 CTE70 (adjusted)	4 Buffer Amount[2]	5 Additional Standard Projection Amount	6 Stochastic Reserve	7 Number of Contracts	8 Cash Surrender Value	9 Prescribed Projection Amount	10 Buffer Amount[3]	11 Additional Standard Projection Amount	12 Deterministic Reserve	13 Number of Contracts	14 Cash Surrender Value	15 VM-A, VM-C, and VM-V Reserve	16 Number of Contracts
1. Post-Reinsurance-Ceded Reserve																
1.1. Fixed Annuities Deferred without Guaranteed Living Benefit							XXX						XXX	XXX	XXX	XXX
1.2. Indexed Annuities Deferred without Guaranteed Living Benefit							XXX						XXX			XXX
1.3. Individual Immediate and Deferred Income Annuities and Annuitizations							XXX						XXX			XXX
1.4. Structured Settlements							XXX						XXX			XXX
1.5. Pension Risk Transfer and Group Payout Annuities and Annuitizations							XXX						XXX			XXX
1.6. Longevity Reinsurance							XXX						XXX			XXX
1.7. Fixed Annuities Deferred – with Guaranteed Living Benefit							XXX						XXX			XXX
1.8. Indexed Annuities Deferred – with Guaranteed Living Benefit							XXX						XXX			XXX
1.9. Aggregate Write-Ins for Other Products							XXX						XXX			XXX
2. Total Post-Reinsurance-Ceded Reserve (Sum of Lines 1.1 through 1.9)							XXX						XXX			XXX
3. Pre-Reinsurance-Ceded Reserve																
3.1. Fixed Annuities Deferred without Guaranteed Living Benefit														XXX	XXX	
3.2. Indexed Annuities Deferred without Guaranteed Living Benefit																
3.3. Individual Immediate and Deferred Income Annuities and Annuitizations																
3.4. Structured Settlements																
3.5. Pension Risk Transfer and Group Payout Annuities and Annuitizations																
3.6. Longevity Reinsurance																
3.7. Fixed Annuities Deferred – with Guaranteed Living Benefit																
3.8. Indexed Annuities Deferred – with Guaranteed Living Benefit																
3.9. Aggregate Write-Ins for Other Products																
4. Total Pre-Reinsurance-Ceded Reserve (Sum of Lines 3.1 through 3.9)																
5. Total Reserves Ceded (Line 4 minus Line 2)							XXX						XXX			XXX

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VM-30 Actuarial Memorandums vs. VM-31 PBR Reports

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VM-30 and VM-31

- VM-30 provides requirements for the Actuarial Memorandum supporting the Actuarial Opinion, whereas VM-31 provides requirements for the PBR Report
  - AG 53 further builds on VM-30 for providing additional disclosures around asset return assumptions

- VM-31 requires more standardization of reports and additional assumption disclosures
  - Must submit a VM-31 report that is in order with the requirements listed in VM-31, whereas VM-30 report structures can vary greatly from company to company
  - Although VM-30 and VM-31 both include disclosures of assumptions, VM-31 also requires a description of the experience studies process, credibility metrics, and actual-to-expected ratios

- Recent NAIC discussions have focused on cash flow testing for business ceded to counterparties that are not required to comply with VM-30
  - Less detail and standardization than companies who are required to comply with PBR requirements

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APFs Adopted by LATF for 2024 Valuation Manual

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Hedging Updates

- First, a reminder:

  APF 2020-12 (was effective for **2023** valuation and reporting): Guidance on the required modeling of **future hedging programs** (not only CDHS) applies to VM-20 and VM-21 valuations.

- APF 2023-05: New index hedging error methodology for RILAs in VM-21. Instead of reflecting hedge error through weighting between best efforts and adjusted runs, reflect a 1.5% hedge breakage.

- APF 2023-03: More detailed hedge documentation for VM-20.

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Liability Assumption Support Updates

- APF 2022-09: VM-21 contract holder behavior A/E analysis, including commentary, in VM-31 report.
- APF 2022-06, 2022-09: VM-20 inflation and expense A/E analysis, including commentary, in VM-31 report.
- 2023-04: For VM-20 mortality, requires discussion of qualitative forward-looking analysis, such as changes to underwriting, distribution channel, etc. in VM-31 report. Compare to best estimate mortality, if best estimate for CFT differs from anticipated mortality.
- APF 2022-09: Confirmation that not applying future MI does not result in lower VM-21 reserves in VM-31 report.

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Governance Updates

Higher-Level Governance Requirements:

- APF 2022-09: Senior management certification cannot be completed by the qualified actuary.
- APF 2022-08: Alternative Methodology requirements for VM-31 reporting and VM-G.

Validations:

- APF 2022-09: Impact of simplifications should be studied individually and in aggregate.
- APF 2022-09: Explanation that using lagged valuation date will not result in a material impact.
- APF 2023-02: Reconciliation of Exhibit 5 and VM-20 Supplement.

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Asset Assumption Update

- APF 2023-03: Clarifies cost of borrowing for VM-20 and VM-21 can't be less than rate at which positive cash flows are reinvested* in a time period, taking into account duration, ratings, and other attributes of the borrowing mechanism.

*Note that this does not require the cost of borrowing to be greater than the net asset earned rate, which is a **portfolio rate** reflecting both starting and reinvestment assets having different durations, ratings, etc.

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Clarifying and Other Updates

- APF 2022-10: Clarifying ULSG NPR requirements for non-material SGs; NPR for IUL policies passing exclusion tests follows VM-A/VM-C.
- APF 2022-07: NPR and DET mortality adjustments where anticipated mortality exceeds valuation mortality. Test was previously seriatim, but now can be for groups of policies as long as they do not have significantly different risk profiles.
- APF 2022-09: Clarifying reporting to be consistent with requirements: projection period such that no obligations remain (instead of immaterial amount remains).
- APF 2023-07: Sunset VM-21's Company Specific Market Path methodology as of 1/1/2025.

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APFs Adopted by LATF for 2025 Valuation Manual

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Governance Updates

2024-01: VM-01 definition of “Qualified Actuary”.

- Adopted removing the words “only”.
- Requires Qualified Actuary to meet the Specific Qualification Standard with respect to their opining areas, including:
  - basic education, by exam or self-study with a signed statement from another actuary qualified in the same area:
    a) policy forms and coverages,
    b) dividends and reinsurance,
    c) investments and valuations of assets and the relationship between cash flows from assets and related liabilities,
    d) statutory insurance accounting,
    e) valuation of liabilities,
    f) valuation and nonforfeiture laws, and
  - CE requirements: 15 hours relative to topics (a)-(f), 6 organized.

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Governance Updates

2024-02: VM-G Governance in PBR Report.

- Corrects an oversight in the VM, that VM-G documentation was being addressed in the PBR Report for VM-20 but not VM-21. Moved to Executive Summary, so that it was covered for all PBR. VM-G requirements including the reporting requirements outlined in VM-G always applied to both VM-20 and VM-21, but VM-21 PBR Reports were missing a statement that the reporting was available upon request.
- **Board** VM-G Section 2.A.5 (Board Meeting Minutes documenting review and actions undertaken by the board in all meetings where PBR is discussed)
- **Senior Management** VM-G Section 3.A.6 (Reporting to Board on infrastructure, risks, personnel expertise, governance)
- **Qualified Actuary** VM-G Section 4.A.3 (Summary report to board and senior management on valuation processes, PBR results, conservatism, materiality, and unusual issues or findings)

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Life PBR Updates

- 2023-09: Historical Mortality Improvement (HMI) rates.
  - Adopted change from “may” to “shall” reflect HMI. Did not adopt allowance to have LATF require “considerations” for HMI, meaning LATF will need to continue requiring COVID disimprovement to be reflected in FMI rather than HMI for SOA MI rates.

- 2023-13: Adding requirements for international mortality, as the Valuation Manual is mostly silent.

- 2024-04: Update for more recent (2021) CIA Term-to-100 lapse study for ULSG where CSV is minimal and the company does not have credible experience.

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Variable Annuities PBR Updates

Standard Projection Amount requires ongoing maintenance, so VACRSG* developed APF 2024-07.

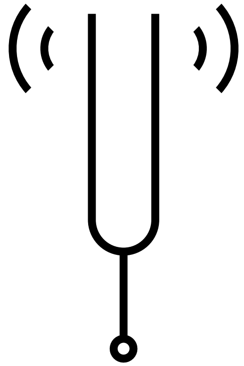
Updating three assumptions based on emerging experience:

Also create a section for full surrenders for ILVAs.

Mortality, based on SOA study. Fx factors for 2012 IAM are differentiated by M/F and for VA without GLB, with or without a roll-up GMDB

Expenses, to reflect inflation

Reflect lower deep in the money lapse experience



* Variable Annuities Capital and Reserve Subgroup

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Variable Annuities PBR Updates

- 2024-08: Selection of VM-21 additional invested asset portfolio, clarifying allowable methodologies and reiterating that the alternative asset guardrail applies to reinvestments for the additional invested asset portfolio.

- 2024-09: IMR deducted from scenario reserve before CSV flooring, rather than being deducted from the aggregate reserves.

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Clarifications

- 2023-08: Clarifying allocation of negative Interest Maintenance Reserve (IMR). Also adopted IMR Guidance and optional IMR Template.
  - APF clarifies that any IMR that is not admitted should not be reflected in PBR or CFT.
  - IMR Guidance clarified that this same treatment should apply for year-end 2023 and 2024, based on the current requirements for an "appropriate" and "reasonable" allocation.
  - IMR template is responsive to a Statutory Accounting Principles Working Group request.
- 2023-11: Removed references to Risk-Based Capital (RBC) in VM-20 and VM-21 that are inconsistent with the purpose, scope, and intended use of RBC, consistent with improvements made in related Sections of the VM-22 draft.

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Non-PBR Updates

- 2023-12: Clarify expectations on reflection of equity return volatility in VM-30 cash-flow testing.
  - Requires reflecting volatility of investment returns for equity-like assets in CFT, by methods such as:
    - Stochastic modeling of equity returns, with tail metric.
    - Up, down, and/or volatile equity return scenarios for each set of interest rate paths.
    - Projecting one or more market drops, taking into consideration future points at which cash-flow testing results could be vulnerable to market downturns.
    - Reflecting a level return assumption set equal to a <u>tail risk metric</u>, for example, setting investment returns to the average of the worst 30% of future scenarios, i.e., CTE70.
  - Regardless of method, need to support that it creates a moderately adverse results.

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Non-PBR Updates

- 2024-10: VM-26 Credit Disability APF from HATF, removing the 12% increase to claim incidence rates based on more recent experience.

- 2024-06: Jumbo rates **may** be used for non-jumbo contracts, with domestic commissioner approval.

- 2024-05: Funding agreements, **optional** monthly rate determination, with domestic commissioner approval.

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Q&A

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Thank You

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