Preliminary Framework Elements for Non-Variable Annuity PBR

American Academy of Actuaries Annuity Reserves Work Group (ARWG)

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Vision and Need

Vision: Provide Academy framework on principle-based reserving (PBR) methodology for fixed annuity products and promote consistency with existing PBR frameworks.

How ARWG Plans to Accomplish Vision

a) Propose a PBR Approach – The ARWG plans to propose a CTE70 stochastic reserve calculation.

b) Develop a Framework Deck – Develop a set of slides laying out various elements of methodology.

c) Recommend Consistency With VM-21 Where Appropriate – Start with VM-21 methodology.

Why Fixed Annuity PBR now?

- Flexible Methodology – As new products introduce greater optionality, there is greater need for a reserve methodology that appropriately captures the risks in these products, as well as future products that emerge.
- Extend Existing PBR Framework – Seek consistency between fixed annuities and life/variable annuities (VM-20/VM-21).

Objective

Objective: Propose a new statutory reserve methodology for fixed annuities that uses an actuarial framework to determine reserves based on the level and type of risk inherent in the contract.

ARWG Pillars of Objective[i]

1) Appropriate Reflection of Risk – All else equal, greater risk in ***moderately adverse conditions*** requires greater statutory reserves, and vice versa.

2) Comprehensive – The statutory reserve accounts for all ***material risks covered in the Valuation Manual, product features, and potential management actions*** associated with the policies or contracts being valued.

3) Consistency Across Products – Statutory reserves between two contracts with ***similar features and risks are consistent*** given the same anticipated experience, regardless of product type.

4) Practicality and Appropriateness – ***Balance principles above with an approach that is practical***, auditable, and able to be implemented.

(i) These objectives are specific to the ARWG and intentionally condensed; refer to VM-21, Section 1.B for a formal list of PBR principles

Path Forward

Aug – Dec 2019	• Develop proposed fixed annuity PBR framework deck • Begin initial modeling sensitivities for generic FIA w/guarantee
Spring 2020	• ARWG to present framework deck proposal to LATF
Fall 2020	• Seek LATF endorsement of PBR framework deck (w/feedback addressed) • Valuation Manual language drafting efforts
Spring 2021	• Begin industry field testing using draft (specifics TBD)
Spring 2022	• Target adoption of fixed annuity PBR (potentially VM-22) • Target 1/1/2023 effective date (monitor as progress develops)

Topics for LATF Discussion

1) Net Assets and Reinvestment Mix – Primary driver for fixed annuity modeled reserves is general account investments. Therefore, explore deviating from VM-20 with the following:

   - *Company-specific spreads/defaults* for "x" years (e.g., 4 years) and grade to prescribed assumptions over time (e.g., by year 7)? Consider consistency with AAT and certifications.
   - *Company-specific reinvestment assumptions*, including the VM-20/VM-21 certifications from an investment officer?

2) Exclusion Test Methodology – Agree with exclusion test to ease implementation burden for fixed annuities with limited optionality or economic risk? Thoughts on approach?

3) Scope – Any concerns with proposed product scope or potential retrospective application?

Preliminary Framework Methodology Elements

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Preliminary Framework Methodology Elements

1) **Product Scope**
2) **Hedging Requirements**
3) **Discount Rate and Starting Assets**
4) **Exclusion Test Methodology**
5) **Preliminary Modeling Efforts**
6) **Topics for LATF Discussion**

1 – Product Scope

Products In-Scope[i]

Account Value Based Annuities

- Deferred Annuities (SPDAs & FPDAs)
- Multi-Year Guarantee Annuities (MYGAs)
- Fixed Indexed Annuities (FIAs)
- Market-Value Adjustments (MVAs)
- Two-Tiered Annuities
- GLBs and Other Guarantees/Riders

Payout Annuities

- Single Premium Immediate Annuities (SPIAs)
- Deferred Income Annuities (DIAs)
- Pension Risk Transfer Annuities (PRT)
- Structured Settlements

Products Out-of-Scope

- Guaranteed Investment Contracts (GICs)
- Funding Agreements
- Mortality-Linked Securities
- Longevity Reinsurance

VM-21 or Fixed Annuity PBR[ii] (TBD)

- Modified Guaranteed Annuities (MGAs)
- Structured Annuities
- Hybrid Variable and Fixed Annuities

Retrospective Application? (TBD)

- Propose for both inforce and new business

(i) Includes both individual and group annuities (refer to the appendix for a description of listed product types)

(ii) "VM-21 or Fixed Annuity PBR" means that the proposal is for these contracts to fall in at least one of the two (not clear which one at this point)

2 – Hedging Requirements

Recommendation: **Allow future hedging programs to be modeled if tied directly to contracts whether CDHS[i] or not. Use VM-21 hedging requirements for GMxB's, with alternative approach permitted if hedging indexed credits.**

Preliminary Fixed Annuity PBR Methodology *(consistent with VM-21 except hedges on indexed credits and CDHS)*

a) No CDHS Qualification – Recommend all future hedging cash flows be reflected, regardless of whether CDHS or not.

b) Hedging Effectiveness – Reduce reserve by a hedging error term, set to an error factor (5% to 100% based on back-testing) multiplied by Best Efforts and Adjusted CTE70 amounts, with optional method for indexed credit hedges:

   - For hedges on indexed credits, reflect a hedge breakage expense in Best Efforts CTE70 by reducing hedge payoffs relative to modeled index credits using an effectiveness multiple such as [95%]; do not require "no hedge" run

c) Hedging Cost Scope & Documentation – Make consistent with VM-21.

d) Comprehensive Hedging Programs – Allow bifurcation of indexed-credits vs. others if separately identifiable.

(i) CDHS = Clearly Defined Hedging Strategy; if conditions meet definition, then may include as part of future hedging in VM-20/VM-21

3 – Discount Rate and Starting Assets

Recommendation: **Use the same methodology as VM-21 for Fixed Annuity PBR**

Preliminary Fixed Annuity PBR Methodology *(consistent with VM-21)*

a) Discount Net Asset Earned Rate (NAER) *(same as VM-21)*
   - Determine vector of annual earned rates replicating growth in invested additional asset portfolio to end of projection
   - Calculate present value of accumulated deficiencies by discounting at the NAER
   - Allow "Direct Iteration Method" to solve for starting assets resulting in "defeasement" of future benefits/expenses

b) Project the Additional Assets *(same as VM-21)*
   - Project invested additional asset portfolio, outside of starting asset portfolio
   - If there are accumulated deficiencies at end of year, then increase assets and repeat

c) Starting Assets *(same as VM-21)*
   - Set to separate account plus hedges and book value general account assets, inclusive of pre-tax IMR

4 – Exclusion Test Methodology

Recommendation: **Use VM-20 exclusion testing methodology with modifications, consisting of three options: ratio test, demonstration test, and certification. If pass, use pre-PBR CARVM.[i] Do not recommend following VM-21 alternative methodology.**

Preliminary Fixed Annuity PBR Methodology *(consistent with VM-20)*

a) Stochastic Exclusion Ratio Test – Use same method as VM-20, with the same 16 prescribed scenarios. The difference between the highest reserve and the baseline must be less than a x% of the baseline reserve to pass.

- Set x% based on threshold to allow a fixed deferred annuity with no GLB or a minimal GLB to pass
  - *Propose not allowing GLBs with greater than 1%-2% roll-up rate to pass*
- Initially set x% threshold through ARWG preliminary modeling, but eventually establish through field testing
- Use unmargined scenario reserves or leverage AAT model
- Similar to VM-20, purpose is to quantify asset volatility & ALM risk

(i) If passing the exclusion test, then companies may use pre-PBR CARVM of AG33 methodology with type A, B, C rates for SPIAs issued before 2018, AG33 methodology with VM-22 rates for SPIAs issued on/after 2018, and AG33/35 methodology (with interest rate updates for modernization initiatives on new policies) for non-SPIAs.

4 – Exclusion Test Methodology

Recommendation: **Use VM-20 exclusion testing methodology with modifications, consisting of three options: ratio test, demonstration test, and certification. If pass, use pre-PBR CARVM.[i] Do not recommend following VM-21 alternative methodology.**

Preliminary Fixed Annuity PBR Methodology *(consistent with VM-20)*

b) Stochastic Exclusion Demonstration Test – Demonstrate that the stochastic reserve is less than AG33 / pre-PBR CARVM.

- Similar to VM-20, allow use of a prior valuation within the past 3 years to conduct test
- May use a subset of policies/scenarios or show substantial elimination of an element that would make CTE70 prevail
- Compare to AG33 / pre-PBR formulaic reserves

c) Certification Method – Subject to regulatory approval, qualified actuary to certify that policies are not subject to material market or asset volatility risk and have limited policyholder optionality.

- Demonstrate the AG33 reserve is greater than principles-based reserve under the NY7 or 16 exclusion scenarios
- May use qualitative risk assessments, showing documentation that supports analysis
- Not allowed for material guarantees (need to define "material")

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5 – Preliminary Modeling Efforts

- Develop a reserve model for a prototype fixed indexed annuity (FIA) product with a guaranteed living benefit (GLB) to project a preliminary non-variable annuity PBR
- Include sensitivity tests on various product features, profitability levels, economic conditions, reinvestment strategies, and liability assumptions
- Objectives are the following:
  - Compare projected reserves for stochastic PBR reserve at CTE70 on FIA with and without GLB and with and without margins to current statutory requirements
  - Help test and inform ARWG recommendations for framework elements
  - Set potential placeholder for percentage threshold on stochastic exclusion ratio test

6 – Topics for LATF Discussion

1) Net Assets and Reinvestment Mix – Primary driver for fixed annuity modeled reserves is general account investments. Therefore, Academy wants to explore deviating from VM-20 with the following:

   - *Company-specific spreads/defaults* for "x" years (e.g., 4 years) and grade to prescribed assumptions over time (e.g., by year 7)? Consider consistency with AAT and certifications.
   - *Company-specific reinvestment assumptions*, including the VM-20/VM-21 certifications from an investment officer?

2) Exclusion Test Methodology – Agree with Academy's preference to use an exclusion test to ease implementation burden for fixed annuities with limited optionality or economic risk? Thoughts on discussed approach?

3) Scope – Academy members expressed interest in researching retrospective application, including policies issued prior to 2017, between 2017 and PBR effective date, and prospectively. Any concerns or consideration with retrospective adoption?

Appendix

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Appendix I: Product Descriptions[i]

Product	Description
Deferred Annuity – SPDA	An annuity with an account value established with a single premium amount that grows with a guaranteed interest rate during the accumulation phase and has guaranteed mortality and interest rates applicable at the time of conversion to the payout phase.
Deferred Annuity – FPDA	An annuity with an account value established with a premium amount but allows for additional amounts to be paid in to the annuity over time, resulting in an increase to the account value.
Fixed Indexed Annuity	An annuity with an account value where the contractholder has the option for a portion or all of the account value to grow at a rate linked to an external index.
Multiple Year Guarantee Annuity	A type of fixed annuity that provides a predetermined and contractually guaranteed interest rate for a specified period of time, after which there is typically an annual reset or a renewal of a multiple-year guarantee period.
Market-Value Adjustment Annuity	An annuity with an account value where withdrawals and full surrenders are subject to adjustments based on interest rates at the time of withdrawal/surrender. There could be ceilings and floors on the amount of the Market Value Adjustment (MVA).
Two-Tiered Annuity	An annuity with an account value where the interest rate credited to the account value depends on the length of time that the annuity stays inforce. If held to a specified date, the interest rate is higher than if surrendered before the specified date.

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Appendix I: Product Descriptions[i] (cont'd)

Product	Description
Single Premium Immediate Annuity	An annuity purchased with a single premium amount which guarantees a periodic payment for life of the annuitant or a term certain and payments begin within one year after (or from) the issue date.
Deferred Income Annuity	An annuity which guarantees a periodic payment for the life of the annuitant or a term certain and payments begin one year or later after (or from) the issue date.
Pension Risk Transfer Annuity	An annuity (typically group contract) issued by insurance company to cover participants in a retirement plan that guarantees periodic payments to retirement participants. The insurance company holds the assets (general or separate account) and has not only longevity risk but also asset risk (credit and reinvestment).
Structured Settlements	An annuity where the periodic benefits arise from settlements of various forms of claims pertaining to court settlements or out-of-court settlements from tort actions, such as arising from accidents or medical malpractice.
Variable Annuity	An annuity where benefits vary according to the investment experience of a separate account or accounts maintained by the insurer.
Term Certain "Annuity"	A contract issued by an insurance company that offers guaranteed periodic payments for a specified period of time, not contingent upon mortality or morbidity of the annuitant.

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Appendix I: Product Descriptions[i] (cont'd)

Product	Description
Guaranteed Investment Contract	Insurance contract typically issued to a retirement plan (defined contribution) under which the insurer accepts a deposit (or series of deposits) from the purchaser and guarantees to pay a specified interest rate on the funds deposited during a specified period of time.
Funding Agreement	A contract issued to an institutional investor (domestic and international non-qualified fixed income investors) that provides fixed or floating interest rate guarantees.
Mortality-Linked Securities	Financial instruments that are sold to investors whose value is affected by a mortality event for an individual or cohort of individuals.
Longevity Reinsurance	Reinsurance contract where the cedent retains the asset risk on the annuities (associated with individuals or pension plans) but passes the longevity risk to the assuming company.
Modified Guaranteed Annuity	A type of market-value adjusted annuity contract where the underlying assets are held in an insurance company separate account and the values of which are guaranteed if held for specified periods.
Structured Annuity	Deferred annuity contract, typically sold as a registered product, where the account value is linked to the value of an external index, including potential triggers and floors that may limit a portion of downside (or upside) risk.

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