Principle-based Reserving for Life Insurance Products

2013 SERA Conference
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The American Academy of Actuaries is a 17,500-member professional association whose mission is to serve the public and 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.
Discussion Outline

- Current State of Affairs
- Implementing PBR: Insurers
- Implementing PBR: Service Providers
- PBR’s Impact
  - Existing business
  - Possible Impact on Product Design
  - Future Refinements
Operative Date of the Valuation Manual

January 1 of the first calendar year following the first July 1 of the calendar year in which all of the following have occurred:

1. Adoption of VM by NAIC of at least 42 members or ¾ of members voting, whichever is greater
2. SVL, as amended by NAIC in 2009, enacted in states representing greater than 75% of direct premiums written as reported in the 2008 annual statements (Life, A&H, Health, Fraternal)
3. Amended SVL enacted in at least 42 of the following 55 jurisdictions: the 50 states of the United States, the District of Columbia, American Samoa, the American Virgin Islands, Guam and Puerto Rico
Contents of the Valuation Manual

- VM-0 (Table of Contents, Introduction, Overview)
- VM-1 (Definition of Terms)
- VM-2 (Types of Contracts, Riders, Supplemental Benefits, Substandard Risks)
- VM-3 (Contracts subject to PBR)
- VM-5 Standard Valuation Law
- VM-20 (Reserve Requirements for Life Products)
- VM-21 (Reserve Requirements for Variable Annuities)
- VM-22 (Reserve Requirements for Non-Variable Annuities)
- VM-25 (Reserve Requirements for Health Insurance)
- VM-26 (Reserve Requirements for Credit Life and Disability)
- VM-30 (Requirements of Actuarial Opinion and Memorandum)
- VM-31 (Requirements for Reporting and Documentation)
- VM-50 (Requirements of Experience Reporting)
- VM-51 (Experience Reporting Data Formats)
Implementing PBR: Insurers

- Understand new valuation requirements
  - Academy (webinars, seminars, ASOP, Practice Note, presentations)
  - SOA (case studies, articles, seminars, presentations)
  - NAIC (Legislative & Educational Briefs, PBR Implementation Activities)

- Enhance modeling systems (e.g., utilities, model efficiency, runtime)

- Update experience studies; commit to frequent updates

- Document valuation processes

- Establish/review governance procedures
  - Assumption review
  - Model validation
  - Model governance
  - Peer review
Implementing PBR: Insurers (cont.)

- Review consistency of PBR with other modeling applications; identify differences
- Secure sufficient resources trained in modeling
- Secure sufficient resources with ability to understand and explain results
- Prepare for annual audits and periodic state examinations
  - Expectation of a thorough review of company use of PBR models and assumptions within the first two years of applying PBR
  - Ongoing assessment of PBR compliance would be conducted during regular financial examinations
- Contribute to industry surveys on the effectiveness of PBR
PBR Calculation

Calculate Net Premium Reserve (NPR)

Compare NPR to Cash Value Floor by policy, Hold Higher

Stochastic Exclusion: 3 Options
- Demonstrate passing Stoch. Excl. RATIO test (6.A.2)
- Stoch. Excl. Demonstration Test (6.A.3)
- Certification by Qualified Actuary (not available to ULSG or Var. Life)

Pass
- Perform Deterministic Exclusion Test; not available to ULSG
  - Reserve is greater of NPR and CV, by policy
  - Add Excess of DR over NPR
  - Exclusion tests are at the Company's option and at policy group level

Fail
- Calculate Stochastic Reserve (SR)
  - Add Larger of (DR Excess over NPR) and (SR Excess over NPR)

• Prescribed mortality, interest, expense assumptions
• Term & ULSG also have prescribed lapse assumptions
• New methodology for term & ULSG
• Other products use CRVM

Perform Deterministic Exclusion Test; not available to ULSG
Implementing PBR: Service Providers

- **Consultants**
  - Understand new valuation requirements
  - Understand expected volatility of results

- **External Auditors**
  - Greater emphasis on analyzing results (esp. current vs. prior), trends, materiality, volatility
  - Greater emphasis on model validation & model governance procedures
  - Greater emphasis on documentation & disclosure

- **Software vendors**
  - Greater emphasis on supporting model validation
  - Greater emphasis on developing utilities to support disclosure
  - Support increased demand to project stochastic results
  - Support increased demand to increase model and runtime efficiency
PBR Impact: Existing Business

- New valuation requirements (VM-20) only apply to new life insurance policies issued after the effective date
- PBR has no impact on inforce reserves
- Interpretation of Actuarial Guideline 38 (AG38) has been recently issued (prior to VM)
  - Interpretations are a step toward PBR ("PBR-lite")
  - Interpretations apply to both new and inforce reserves for products subject to AG38
PBR Impact: New Business

- The VM modernizes valuation procedures for products already issued by insurance companies.

- Impact of PBR is difficult to predict
  - NAIC commissioned an impact study in 2011 conducted by Towers Watson.
  - Greatest impact expected for competitive term and universal life with secondary guarantees (ULSG) where reserves are expected to increase the most.
PBR Impact: Future Refinements

- Define PBR for non-variable annuities (VM-22)
  - Note that PBR is already in place for variable annuities through AG43
- Determine impact on RBC
- Other modifications as indicated by PBR results
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