Non-Variable Annuity PBR Update to LATF’s VM-22 Subgroup

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ARWG: Direction

ARWG Chicago meeting, May 2013: VM-22 plan

- Not an annuity version of VM-20
- Like the VM-21 (AG 43) framework: two parts
  - A deterministic floor reserve ("CARVM-like")
  - A modeled reserve (model office projections)
- Consideration of a new modeled reserve approach
- KS insurance department volunteers for a field test
ARWG: Direction / Goals

Report to LATF, August 2013: Update on a Potential VM-22 Reserve Methodology

➤ Goal: to propose a sound principle-based reserve standard for non-variable annuities incorporating:

➤ A formulaic floor reserve that uses CARVM like methods to determine a minimum reserve (not the primary reserve)
  ➤ May reflect lapses & utilization rates other than 0% or 100% for elective benefits

➤ A modeled reserve reflecting key product risks
  ➤ Applicable to current and future complex product designs
ARWG: Direction / Goals

- Reserves are “right sized”
- Floor reserve does not overwhelm the modeled $V_x$
  - Expands on elements found in AG 33, but less conservative
  - Satisfies requirements for treatment as the Tax Reserve
- Modeled $V_x$ based upon on small set of scenarios
  - More manageable run times
  - Key risks modeled stochastically - possibly RSM?
- Aggregate margin – transparent margins
Minimum Reserve = Floor Reserve Amount + max \{0, Modeled Reserve – Floor Reserve Amount\}

where

Floor Reserve Amount = \sum_{k} \text{Floor Reserve}_{contract \, k} and

Floor Reserve_{contract \, k} = \max \{FR1, FR2, FR3\}
VM-22  Section 3. Floor Reserve

- Serves as a yardstick with which to establish a reasonable floor for the Minimum Reserve
- Serves as a possible model for the computation of tax reserves
- Not necessary that the Floor Reserve be an adequate reserve for each contract valued
- Not designed to reflect the differences in product design to the same degree as the Modeled Reserve
Floor Reserve 1 (FR1)

- Recall: Floor Reserve $\text{contract k} = \max \{\text{FR1, FR2, FR3}\}$

- FR1 = normal CARVM with a couple of differences
  - Assume Listed Benefits are terminated as of the valuation date
  - Possibly use prescribed lapse rates adjusted for In-the-Moneyness (ITM-ness) of rich non-listed benefits, such as significant GMDBs
Floor Reserve 2 (FR2)

- Recall: CARVM = GPV{ all Integrated Benefit Streams}

- FR2 considers one of those Integrated Benefit Streams for each Listed Benefit

- Calculation Rules
  - Each Listed Benefit is assumed to be elected eventually (unless death occurs first) (i.e., no other elective benefits in FR2)
  - Each Listed Benefit is assumed to be elected according to a corresponding Listed Benefit Utilization Function (LBUF)
  - If a single contract has multiple Listed Benefits, FR2_k shall be calculated for each Listed Benefit k (for k = 1 to n) ignoring all other Listed Benefits. Then

\[ FR2 = \max \{FR_1, FR_2, \ldots, FR_n\} \]
Listed Benefit

- Term that applies to certain elective benefits
- Examples may ultimately include
  - Guaranteed Lifetime Income Benefits (GLIBs)
  - Annuitization within the annuitization tier of a two-tiered annuity
Listed Benefit Utilization Function
Sample Smoothed Utilization Rates for GLIBs
(Rates shown are percent of remaining lives)

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Floor Reserve 3 (FR3)

- FR3 is based on the amount available for the contractholder to withdraw from the contract as of the statement date.
Modeled Reserve Methodology - to be determined

KS Sponsored Field Test
  - Multi-risk
  - Representative scenarios
  - Aggregate margin
Questions?