EIA Reserves

PHOENIX

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Annuity Product Types

- Basic Types of Annuities:
  - Immediate: Paying out benefits.
  - Deferred: Accumulating for later payouts.
- Funding Vehicles:
  - Fixed: Principal guaranteed
    - Explicit credited rate
    - **Credits linked to outside index**
  - Variable: Principal not guaranteed

Typical EIA Products

- Single Premium
- Various indexed options and a fixed option
  - 1 year option term is popular
- Various riders w/ GLWB and GMDB
- Premium Bonus w/recapture upon early termination
- Funded through General Account or Nonunitized Separate Account.

Reserve Basics

- Insurance products collect premiums early to pay claims later.

- Reserve= PV of Future Benefits – PV of Future Premium

- Types of Reserves
  - Statutory Reserves- insurance laws, “conservative”
  - GAAP Reserves- FASB & SEC, “best estimate”
  - Tax Reserves- IRS for tax return

Statutory Reserves

- Standard Valuation Law governs
  - Defines Commissioner's Annuity Reserve Valuation Method (CARVM)
- Further guidance given by Actuarial Guidelines.
- Relevant Guidelines for Annuities:
  - AG33- Basic CARVM for Fixed
  - AG35- Basic CARVM for EIA
  - AG43- Basic CARVM for Variable

Reserves- AG35 Basics

- CARVM for equity indexed annuities
  - GPV of all future benefit streams.
  - Considers future surrenders or annuity benefits.
    - Does not cover GMWB or GMDB.
  - Considers the nature of index options.

Reserves- AG35

- Two types of computational methods:
  - Type 1- “Hedged as Required”
    - Requires ongoing demonstration of hedge effectiveness.
  - Type 2- Not “Hedged as Required”
    - Requires certification of reasonableness of assumptions.

AG35 Methods

- Type 1- EDIM (Enhanced Discounted Intrinsic Method)
  - Requires initial reserve from Type 2
  - Requires monitoring
- Type 2-
  - CARVM UMV (CARVM with Updated Market Values)
  - MVRM (Market Value Reserve Method)
  - BSPM (Black Scholes Projection Method)

AG35 Methods

- Basic methodology of Type 2 methods is to project the index for the current period forward assuming the index is fully hedged with a call option.
  - Essentially assumes projection at the risk-free rate of return.
  - Any caps, floors, or participation rates are considered at current level.
- Subsequent periods use guaranteed caps and participation (typical CARVM method).
- Common Practice is to use MVRM for terms >1 year, BSPM for terms = 1 year.
- Works best if replicating option has a closed-form price

Reserving for the GMxB

- AG35 does not cover the GMxBs.

- CT interpretation:
  - Use AG43 if in SA
  - Use AG33 if in GA

AG33 Rider Basics

- Guaranteed payments are another benefit stream.
- Rider withdrawals while fund value > zero are treated as other partial withdrawals.
- GMWB projected after fund value equals zero use guarantee duration based on projected time fund value reaches zero.
- Assumes utilization at most opportune time to contractholder.

AG43 Basics

- AG43 reserve is greater of:
  - Stochastic reserve (e.g., 1,000 scenarios)
    - Uses actual company assets
    - Uses actual company experience
      - Assumptions must be prudent estimates
    - Reserve is based on CTE 70 measure
      - CTE = Conditional Tail Expectation
        - » Average of (100-70)% worst results
  - Standard Scenario
    - Single scenario, uses prescribed assumptions
    - Use AG35 for Basic Adjusted Reserve

Reserve Geography

- GA Product
  - Greater of AG35 or CSV in Exh. 5, Sec. B
  - Excess for GMxB in Exh. 5, Sec. G

- SA Product
  - Greater of BAR or CSV in Exh. 3, Sec. B
  - Excess for GMxB in Exh. 5, Sec. G

GAAP Reserves

- The index option is considered an embedded derivative under SFAS 133.
  - Must be valued like a derivative.
- Base contract is still considered an annuity that *hosts* the embedded derivative.
- Contract must be bifurcated between embedded derivative and host.

GAAP Reserves

- ED must consider current and all future option periods.
  - Initial ED is fair value of all future options.
- Host at issue = Premium + Bonus – ED
  - i.e., no gain or loss at issue.
  - Cost of bonus is set as a Sales Inducement asset and amortized over life of contract.
- Host interest rate is IRR that gets Host to guaranteed value, maybe based on SNFL.

GAAP Reserves

- Common to use Budget Method
  - Assume index credit is option budget growing at risk free rate.
  - Host accrues at IRR.
  - Discount rate must consider nonperformance risk.
  - Withdrawals allocated between host and ED.

GAAP for Riders

- If rider is considered to be insurance, then reserve is determined under SOP 03-1 as accrual of benefit ratio * policy revenue less actual claims.
  - Benefit ratio =
    - PV future claims/PV future revenue
- Lifetime GMWB and GMDB fall into this category.

Q & A

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