Actuarial Guideline 43 Overview

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AG 43 (VACARVM) Overview

- Background
- Final Version of AG 43
  - “Last Minute” Changes
- Methodology
  - Areas that may be different from C-3 Phase 2
  - Challenges
Background
PBA for Variable Annuities

- Reserves – Actuarial Guideline 43
  - 12/31/2009 effective date
  - Replaces AG 34 and 39
  - May be added to the Valuation Manual (VM-21)
  - LHATF Hedging Guidance Subgroup

- Risk-Based Capital – C-3 Phase 2
  - In place since year-end 2005
  - RBC Instructions – LR025
    - Interest Rate and Market Risk

“Last Minute” Changes to AG 43

- Allocation of the Aggregate Reserve
- Addition of the 1994 VA MGDB Mortality Table
- Revisions to the Standard Scenario
- Limit on non-contractually guaranteed Revenue Sharing
- Treatment of Clearly Defined Hedging Strategies
- Disclosures on contractholder behavior assumptions
- 12/31/2009 effective date
Other Differences from C-3 Phase 2

- Methodology is further developed, for example:
  - Anticipated Experience vs. Best Estimate
  - Prudent Estimate vs. Prudent Best Estimate
  - Guidance on setting contractholder behavior assumptions

- Fundamental Reserve vs. RBC differences
  - Reserves are pre-tax while RBC is after-tax

- Standard Scenario
  - Aggregate (C3P2) vs. Individual (AG 43)
  - Applied only to Market Risk component in C3P2
    - Different definitions for Basic Adjusted Reserve

Other Differences from C-3 Phase 2 (cont.)

- Style (different work groups), for example:
  - Greatest present value of accumulated deficiencies vs. lowest present value of accumulated statutory surplus; and
  - The structure in which the requirements presented (where is that provision?)
AG 43 Methodology

- **Aggregate Reserve** equals:
  - Conditional Tail Expectation Amount, but
  - Not less than the Standard Scenario Amount

- Calculated as:
  - the Standard Scenario Amount, plus
  - any excess of
    - the Conditional Tail Expectation Amount over
    - the Standard Scenario Amount

“Conditional Tail Expectation Amount” = stochastic component
“Standard Scenario Amount” = deterministic component

What do you do with the Results?

- Allocation of Results to Contract
  - Excess of CTE Amount over SS Amount
  - Allocated based on differences between SS Amount and Cash Surrender Value for each contract

- General Account versus Separate Account
  - Reported General Account reserve not less than the excess of:
    - Aggregate Reserve, over
    - Basic Reserve attributed to the variable portion of the contracts
  - Allows flexibility for Separate Account reported reserve

- Challenges – additional work?
Reinsurance in AG 43

- **Aggregate Reserve** determined net of reinsurance ceded
  - Treaty must meet requirements that would allow it to be accounted for as reinsurance
  - Reserve before reinsurance – Appendix 2

Reinsurance in AG 43
Challenges

- Do treaties qualify to be included?
- Aggregate vs. individual treaty provisions
  - e.g., YRT structure with min or max YRT rate
- Multiple treaties
  - “Allocating” reserve credit
  - Sum of pieces ≠ total
  - Use Standard Scenario?
- Work with reinsurer partners
  - Method, data, assumptions
Stochastic Component in AG 43

- Model over broad range of stochastic scenarios
- Scenarios must meet Scenario Calibration Criteria
- Model uses Prudent Estimate assumptions
- Starting Asset Amount = approx value of stat reserves
- Uses Working Reserve equal to Cash Surrender Value
  - CSV floor on each scenario (different from VM-20)
- Aggregated over all business under scope
  - Option to use sub-groups
- CTE 70

Stochastic Component

- Starting Asset Amounts
  - Approximate statement value of stat reserves as the start of the projection
  - Includes all Separate Account assets and hedges
  - Negative cash or assets?
- Best to use same amount for AG 43 and C-3 Phase 2 calculations
Stochastic Modeling of Hedges

- Hedges can be used within projections
  - Must include currently held hedge instruments
  - Include company’s actual future hedge strategy if company meets Clearly Defined Hedging Strategy

- Possible methods to incorporate hedge strategy
  - Model directly in projections
  - Evaluate outside of the stochastic cash flow model

- Hedging Strategy needs to recognize all risks and costs

Stochastic Modeling of Hedges

Calculation of CTE Amount (reported)

- CTE Amount (reported) = \([E \times a) + (1 - E) \times b]\)
  - \(a = \) CTE Amount (best efforts)
  - \(b = \) CTE Amount (adjusted)

- \(E = \) “effectiveness factor”
  - Reflects model sophistication
  - Can’t be greater than 0.70
  - Can’t be greater than 0.30 if hedge cash flows are not directly modeled or company has no experience
  - Demonstration that justifies values used for \(E\)
Stochastic Modeling of Hedges
Additional Considerations

- Actuary must review actual effectiveness
  - Compare projections to actual results
- Certifications
  - By actuary and
  - By financial officer responsible for trading
- Documentation is required

Stochastic Modeling of Hedges
Challenges

- \[ (E \times a) + (1 - E) \times b \] is new
  - different from C-3 Phase 2
- Emphasis on provision reducing impact of hedges, including counterparty risk

“...the ultimate effect of the current hedging strategy (including currently held hedge positions), on the Conditional Tail Expectation Amount needs to recognize all risks, associated costs, imperfections in the hedges and hedging mismatch tolerances associated with the hedging strategy. The risks include, but are not limited to: basis, gap, price, parameter estimation, and variation in assumptions (mortality, persistency, withdrawal, annuitization, etc.). Costs include, but are not limited to: transaction, margin (opportunity costs associated with margin requirements) and administration. In addition, the reduction to the Conditional Tail Expectation Amount attributable to the hedging strategy may need to be limited due to the uncertainty associated with the company’s ability to implement the hedging strategy in a timely and effective manner. The level of operational uncertainty varies indirectly with the amount of time that the new or revised strategy has been in effect or mock tested.”
Net Revenue Sharing Income

- May be included in stochastic projections
  - Amount used
    - Net of associated expenses
    - Determined using prudent estimate assumptions
  - Revenue must be received by the company
  - Signed agreements

- AG 43 treatment different than C-3 Phase 2
  - Splits “contractually guaranteed” vs. “non-”
  - Haircut for non-guaranteed Net Revenue Sharing Income
    - 100% ➞ 50% over first 6 projection years (50% thereafter)
    - Not more than 25 bps for 6 and subsequent projection years

Stochastic Component
Contractholder Behavior

- Guidance on setting Prudent Estimate assumptions

- Key concepts
  - Relevant and fully credible empirical data
  - Conservative end of plausible spectrum
  - Aggregate vs. Individual margins
  - Sensitivity testing
  - Consistent with past experience
  - Consistent with scenarios used in CTE calculation
Stochastic Component
Contractholder Behavior Challenges

- Use same assumptions as C-3 Phase 2?
  - Consistency with CTE level (70 vs. 90)
- What do you do when you have no experience?
- Additions made to required “report” for lapse and utilization assumptions associated with guaranteed living benefits
  - Actual to expected lapses for VAs with living benefits

Alternative Methodology (AM)

- Alternative to CTE based on projections
  - AM applies to VAs with no guarantees or GMDBs only
  - Seriatim calculation with 3 components
    - Amortization of Surrender Charge (CA)
    - Fixed Expenses (FE)
    - GMDB costs less charges (GC)
  - No credit for hedges
- Special certification and documentation required
- Similar for reserves and RBC, but RBC AM is more conservative
- Factors, instructions and .dll function on Academy website
  - [http://www.actuary.org/life/phase2.asp#3](http://www.actuary.org/life/phase2.asp#3)
Deterministic Component for AG 43

- **Standard Scenario (SS)**
  - Single scenario with standard assumptions
  - Seriatim for reserves (aggregate for RBC)
  - Aggregate adjustments for currently held hedges and reinsurance

- **SS for each contract is sum of BAR and ANR, but not less than the contract’s cash surrender value**
  - Basic Adjusted Reserve (BAR), and
    - AG 33 reserve ignoring guaranteed benefits and partial withdrawals
  - Accumulated Net Revenue (ANR)
    - Greatest PV of guaranteed benefits less portion of revenue

Standard Scenario Requirements

**Accumulated Net Revenue**

- Prescribed drop and returns (before deduction for fees)
  - 13.5% immediate drop for equities
  - Followed by 4% growing to 5.5% annual return for equities

- Prescribed assumptions
  - Revenue, mortality, contractholder behavior

- Revenue allowed
  - During surrender charge period
    - 20 bps
    - Charges for guarantees (greater of 20 bps or explicit charges)
    - Contractually guaranteed Net Revenue Sharing Income
    - 50% of excess after surrender charge period
Other AG 43 Considerations

- Annual Statement Blanks
  - Change in Reserve Analysis
  - Exhibit 5A (initial and on-going)

- Tax Reserve Issues...

Tax Issues Associated with AG 43

- IRS/Treasury Notice 2008-18 (January 2008)
  - Alert companies to tax issues arising from “proposed VACARVM” and Life PBR
  - Academy Life Tax Steering Group provided comments
  - AG 43 appears to have fewer issues than Life PBR

- No guidance has been issued yet!

Caveat: This discussion on Tax issues represent the speaker’s point of view and does not represent Academy positions. Actuaries should discuss these issues with tax professionals before forming their opinion on these issues.
Potential Tax Questions for AG 43

1/1/2009 Valuation

<table>
<thead>
<tr>
<th>Issue Date</th>
<th>Stat Reserve</th>
<th>Tax Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981 – 2008 (1)</td>
<td>AG 43</td>
<td>AG 34/39</td>
</tr>
<tr>
<td>2008 (1) – 2010</td>
<td>AG 43</td>
<td>AG 43 (2)</td>
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</tbody>
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1) What is the AG 34/39 “cut-off” date for the tax basis – 9/23/2008, 1/1/2009 or 12/30/2009?

2) How is the tax basis applied? For example:
   - Does the tax basis include the CTE 70 calc or is it only the Standard Scenario?
   - Is any excess of the CTE 70 calc over the Standard Scenario allowed?
   - If so, will the CTE 70 calc need to be modified? Also, can the excess allocated to contract using the required approach in AG 43 available for the stat cap?
   - How is the AFIR brought into the tax basis – if at all?

Additional Tax Questions

- The tax reserve for a given contract may not be greater than the “stat cap” for that contract
  - Does the stat cap include the allocated excess, if any, of the CTE 70 calc over the Standard Scenario?

- Change in Basis
  - Initial – is the change in tax reserve due to the implementation of AG 43 for inforce business considered a change in basis and therefore eligible to be spread?
  - On-going – will the impact of future changes in assumptions, which are a normal part of the CTE 70 calc, be considered a change in basis for tax purpose (may be moot if tax basis is only the Standard Scenario)
In Conclusion. . .

- Many similarities between AG 43 and C-3 Phase 2
- Principle-based Reserves
  - Require more attention than principle-based RBC in certain areas
  - Can be more important than RBC for regulatory actuaries
- It’s up to the actuarial profession to see how well PBR works!