

# Statutory Reserves for Variable Annuities

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## 1. Current statutory rules for reserving Variable Annuities

- Actuarial Guideline 34 for GMDB
- Actuarial Guideline 39 for GLB
- Asset Adequacy Analysis (aka Cash Flow Testing)

## 2. Rules that become effective on 12-31-09

- Actuarial Guidelines 34 and 39 repealed
- Actuarial Guideline 43 (VACARVM) becomes effective
- Reserve = max (Standard Scenario, CTE Method)
- For CTE method, have a choice between multi-scenario modeling or Alternative Method

## 2. Rules that become effective on 12-31-09

- Can view the Standard Scenario as a replacement for AG 34 and 39, with the CTE method being an Asset Adequacy Analysis with additional rules

### 3. Process by which the new rules were adopted

- LHATF asked Academy for assistance
- Academy established Variable Annuity Reserve Work Group
- LICONY and ACLI negotiations with NYID

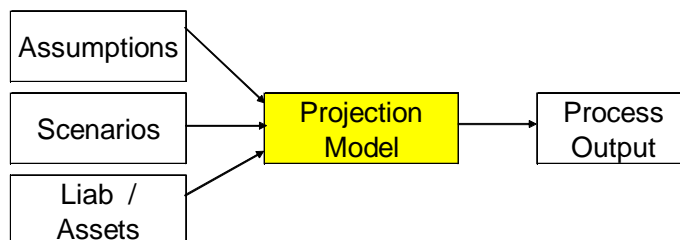
### 4. Comparison to RBC rules

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• RBC<ul style="list-style-type: none"><li>– After Tax</li><li>– CTE 90</li><li>– Applies to all VAs</li><li>– Can Aggregate in Standard Scenario</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Reserves<ul style="list-style-type: none"><li>– Before Tax</li><li>– CTE 70</li><li>– May not apply to some VAs issued prior to CARVM</li><li>– Many detail instructions added</li><li>– Can not Aggregate in Standard Scenario</li></ul></li></ul> |
|---|---|

## 4. a. What is in scope?

- Variable annuities, both deferred and immediate
- Group annuity contracts not subject to CARVM, but include guarantees similar to GMDBs or VAGLBs
- All other products that contain guarantees similar to GMDBs or VAGLBs

## 5. The Modeling Method



## 5. a. Build a projection model

- Model what is important
- Simplify what is less important

## 5. b. Choose assumptions

- Prudent Estimate Assumptions
- Experience Studies

## 5. c. Choose scenarios

- Need enough scenarios to assure that reserve is not understated
- Need to satisfy calibration rules
- “Variance reduction techniques”

## 5. d. Create inventory files

- Build liability in force and assets owned files
- May need modeling of both assets and liabilities, but should verify that the modeling doesn't lead to intentional understatement of reserve

## 5. e. Run projection

## 5. f. Process output

- Scenario reserve is starting assets minus lowest present value of surplus
- CTE method reserve is CTE 70 of the scenario reserves

## 6. Alternative Method

- Factor Based
- Choice (contract by contract) whether to model it or to use the AM
  - Can't use Alternative Method for contracts with GLBs
  - Can't use Alternative Method for contracts that aren't VAs

## 6. Alternative Method

- Three components and a rule for combining them:
  - CA (cost to amortize the surrender charge)
  - FE (cost of per policy expenses net of policy fees)
  - GC (cost of guaranteed benefits)



## 7. Standard Scenario

- Must prepare standard scenario for all contracts, no matter which choice is used for the CTE method

## 8.a. Sensitivity tests and other analyses

- Need reserves before and after reinsurance
- Need to determine reserve for each contract
- Sensitivity test major assumptions

## 8.b. Required paperwork

- Certification
- Methods and Results memo
- Validation of input and output

## 8.c. Documentation

- Internal documentation:
  - Run instructions
  - Description of controls
  - Any details you want to keep at hand, but didn't see a need to put into the formal memo

## 9. Asset Adequacy Analysis

- The Actuarial Guideline says that Asset Adequacy Analysis must be performed to support the reserve determined.

## 10. Stand-alone GMDB/GLB

- Do the same things as in the normal situation, except only capture items that flow through the books of the insurance company.