

American Academy of Actuaries'  
Economic Scenario Implementation  
Work Group (ESIWG)  
Update to LHATF

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# Discussion Topics

- Use of Economic Generators: Current State
- Use of Economic Generators: the Future
- Recent ESIWG Activity
- ESWG/ESIWG Plans
- ESWG/ESIWG Position on Generators
- NAIC/LHATF Role



## Use of Economic Generators: Current State

- The C3P1 and C3P2 calculations are based on multiple economic scenarios.
- C3P1 is based on a pre-packaged set of 12 or 50 interest rate scenarios generated by the company, based on the Academy ESWG interest rate generator. Recall that the chosen scenario sets are based on interest rate mismatch for representative annuities and investment strategies.
- For some companies, C3P2 calculations are based on a set of prepackaged scenarios published by the ESWG. These scenarios satisfy calibration criteria recommended and approved by the NAIC. For other companies, C3P2 calculations are based on scenarios generated from a proprietary generator that also satisfy calibration criteria.
- VACARVM calculations, effective for year end 2009, will use the scenarios provided for the C3P2 calculation.



## Use of Economic Generators: the Future

- Stochastic reserve calculations requiring a scenario generator are specified in VM-20 (Life Products), VM-21 (Variable Annuities), and an anticipated VM-22(Annuities).
- With the development of PBA for life insurance (reserves and C3P3), the ESWG developed a more robust interest rate generator and calibration criteria to support stochastic calculations for all products.
  - The ESWG has recommended that this interest rate generator be used in the C3P1 calculation, replacing the existing generator that produces the set of 12 and 50 scenarios.
  - The generator could be used to generate updated prepackaged scenarios and calibration criteria for bond funds and/or interest rate scenarios for the C3P2 and VACARVM calculations for YE2009; updated bond returns from this new generator would likely require approval by the NAIC and could affect company preparation for the new VACARVM requirements.



## Recent ESIWG Activity

- Released updated interest rate scenario generator:
  - IR generator is a stochastic log volatility model and generates realistic scenarios. Generator includes a mean reversion parameter updated for recent experience and an automatic process for updating the parameters based on updated historical yield curves.
  - 10,000 scenarios updated for September 30, 2008 has been released.
  - Scenario picking tool and 1000 interest scenarios calibrated to September 30, 2008 environment have been released.
  - Statistics generator has been released.
- Responding to LHATF sub-group's questions
  - Sensitivity of scenario statistics to changes in parameters.
  - Additional discussion of certain development choices.



## ESWG/ESIWG Plans

- Expand documentation with FAQ Document and Getting Started Guide
- Continue to enhance generators
  - Additional user flexibility.
  - Develop ability to generate bond fund returns in enhanced IR generator.
  - Enhance equity generator to include process for automatically updating parameters based on recent historical experience.
- Continue work with LHATF and LRBCWG
  - Discuss process for approving generators.
  - Define process for generating economic scenarios on a routine basis.



## ESWG/ESIWG Position on Generators

- Use of one interest rate generator and one equity for all principle-based reserve and capital calculations.
- Permit the use of company generator with prescribed calibration criteria in addition to prescribed prepackaged scenarios.
- ESWG generator and calibration criteria have been developed with practical considerations in mind.
  - Will not require frequent development.
  - Generator includes process to automatically update parameters.
  - ESWG generator considered to be a “safe harbor” generator sufficient for regulatory minimums. However, more sophisticated generators will capture additional risks in the scenarios and the use of more sophisticated generators should be allowed in PBA.



## NAIC/LHATF Role

- Approve the recently released interest rate generator and calibration criteria.
- Discuss the maintenance of the generator process and output on a routine basis (e.g., prepackaged scenarios vs. generators/calibration criteria, updated parameters, resources).
- Update Valuation Manual and RBC Instructions to reflect consistent, clear alternatives.

