

American Academy of Actuaries Long-Term Care (LTC) Principle Based Reserves Work Group

Update

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Al Schmitz, MAAA, FSA

Chairperson, LTC Principle Based Reserve Work Group



Agenda

- Objectives of the Work group
- History and work to date
- Recent results
- Next steps/timeline
- Questions



Objectives of Work Group

- Based on the initial request from the NAIC, the objective of the work group is to develop a prototype stochastic model to be used to help set the direction of principles-based reserving for LTC
 - The work group agreed to produce a report that would include considerations of stochastic modeling and suggested next steps
 - The model is intended to be illustrative and not inclusive of detailed modeling considerations or all policy features that may be offered by an insurer



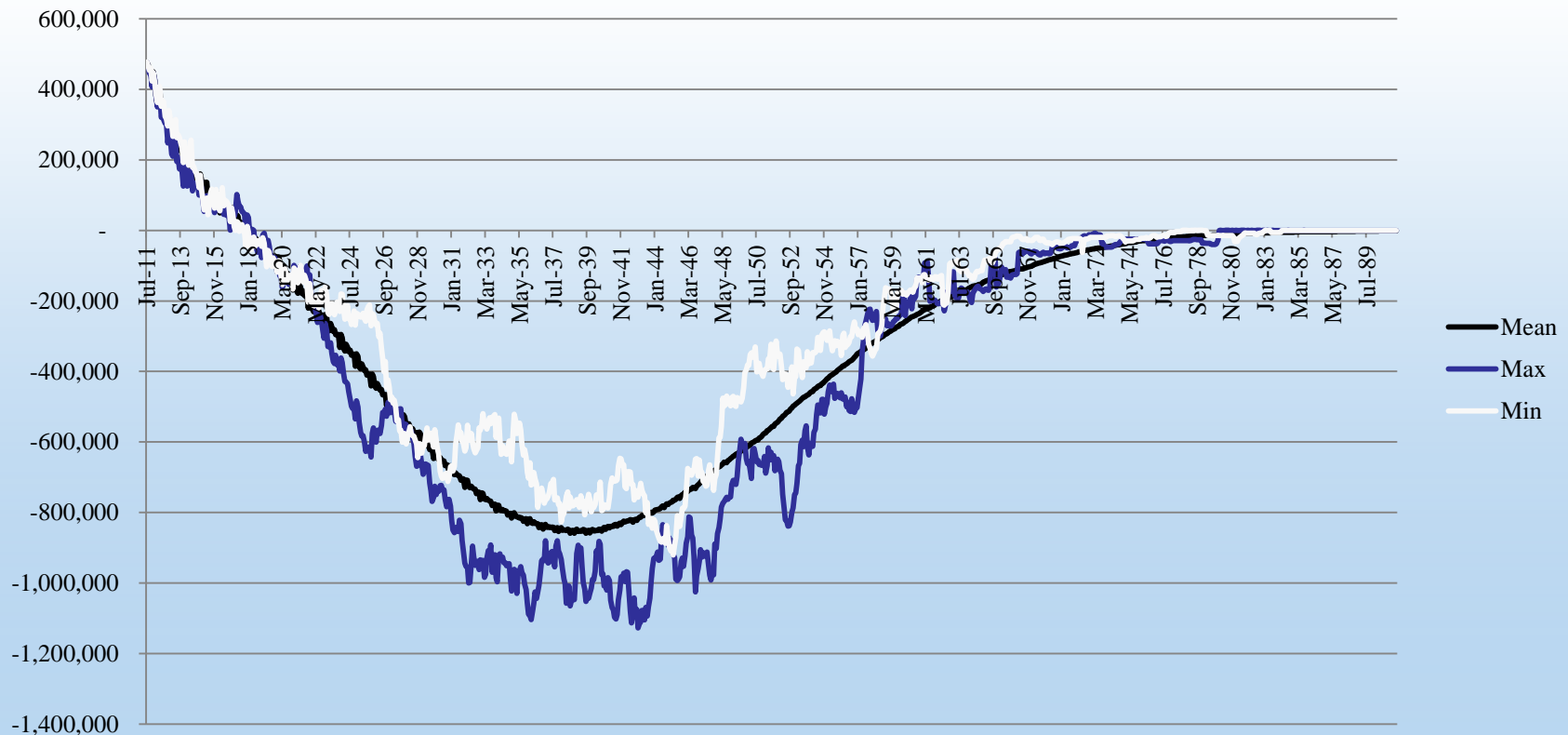
History and Work to Date

- I. Stochastic modeling – key variables: morbidity, lapse, mortality, interest
- II. Modeling approach – morbidity, mortality, and lapse in Excel prototype using Hazard Rate Approach
- III. Modeling considerations – premium rate changes, interest rate impact, morbidity/mortality changes, margins
- IV. Assumptions and data collection – sample assumptions developed by the work group, two inforce files provided by two companies
- V. Stochastic and deterministic results



Initial Results

Cash Flow Dispersion – Inforce Block of LTC Insurance

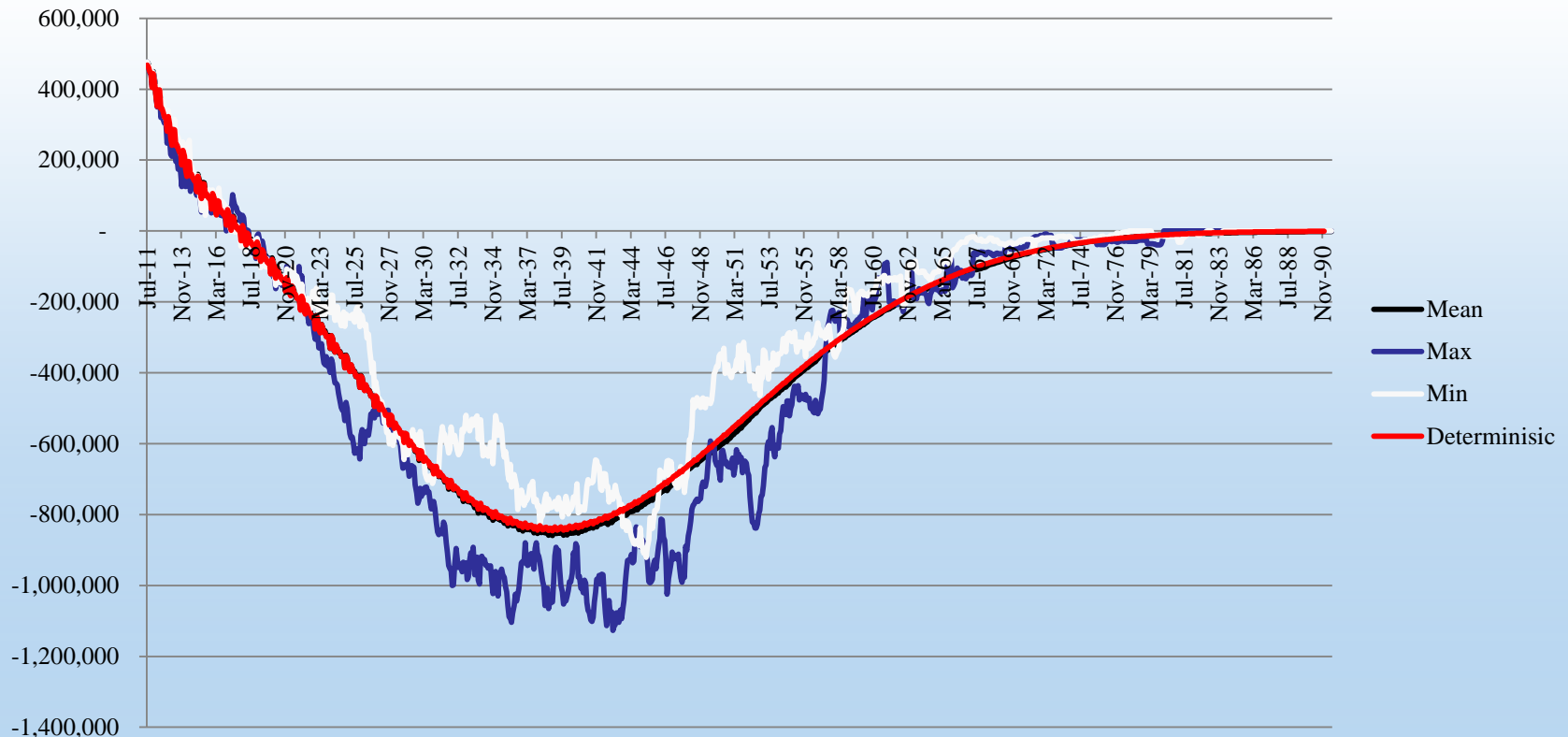


Sample block of 6,000 policies-Graph developed by members of the work group. For illustrative purposes only



Initial Results

Comparison to Deterministic – Inforce Block of LTC Insurance



Sample block of 6,000 policies-Graph Developed by members of the work group. For illustrative purposes only



Initial Results

Distribution characteristics of present value of cash flow at 4 percent

- Mean 87 m
- Maximum 106 m
- Minimum 72 m
- Std Dev 5.261 m
- Skewness 0.138209
- Kurtosis 0.168010



Initial Results

■ Sample block of 6,000 LTC insurance policies, conditional tail expectation (CTE) calculations

■ CTE 0 (GPV)	87m	100.0%
■ CTE 10	88m	101.2%
■ CTE 20	89m	102.1%
■ CTE 30	90m	102.9%
■ CTE 40	90m	103.8%
■ CTE 50	91m	104.8%
■ CTE 60	92m	105.8%
■ CTE 70	93m	107.1%
■ CTE 80	95m	108.6%
■ CTE 90	97m	110.8%
■ CTE 95	98m	112.8%
■ CTE 99	103m	117.8%

Note: CTE 90, for example, is equal to the average of the worst 10 percent of scenarios, each scenario cash flows discounted at 4 percent



Target Timeline

- Test sensitivity on smaller block of policies (6,000 policies), several morbidity and termination rate runs
 - Complete by end of April 2014
- Run larger block of policies (20,000) through model and analyze results
 - Complete by end of February 2014
- Summarize results in written report
 - June/July 2014



Questions



Staff Contact Information

Tim Mahony

Health Policy Analyst (State)

American Academy of Actuaries

1850 M St., NW (Suite 300)

Washington, DC 20036

202-223-8196

mahony@actuary.org

