MEETING MATERIALS
SUPPLEMENTAL PACKET

LIFE ACTUARIAL (A) TASK FORCE

August 12, 2021

NAIC SUMMER NATIONAL MEETING

Virtual
Agenda Item 4

Discuss Comments on the Economic Scenario Generator (ESG)
Economic Scenario Generator (ESG) Update

Scott O’Neal, FSA, MAAA – NAIC Life Examination Actuary
Dan Finn, FCAS, ASA – Managing Director at Conning

8/12/2021
Agenda

1. Activities of the ESG Drafting Group
2. Key goals for a new GEMS ESG Treasury model calibration
3. Treasury model targeting impacts and tradeoffs
4. Next Steps
Background

The NAIC’s ESG Drafting Group is working to develop ESG recommendations to the Life Actuarial (A) Task Force and Life RBC (E) Working Group and is comprised of:

- Regulators,
- NAIC staff,
- Conning staff, and
- Subject-matter experts.

The subject-matter experts include representatives from the American Academy of Actuaries and the American Council of Life Insurers, life insurance industry professionals, and academics.
Activities of the ESG Drafting Group

• The group’s immediate focus is to develop a set of recommendations for the GEMS Treasury model and an associated set of scenarios for consideration by LATF and the LRBC WG.
• The development of scenarios for eventual use in statutory reserve and capital requirements is an iterative process and multiple recalibrations of the GEMS ESG are expected before a recommendation for field testing is delivered. The group is currently reviewing a new calibration of the Treasury model and expects to make changes.
• Meetings of the group are focused on reviewing scenario output. A SharePoint site has been set up for the group to handle more technical discussions and share additional analysis of the scenario sets.
Key Goals for a New Treasury Model ESG Calibration

All targets are at end of Year 30, unless specified otherwise

1. Make sure there are enough low-for-long scenarios
2. Make sure there are enough high-for-long scenarios
3. Reduce frequency and severity of negative Yields at the shorter tenors relative to the “Revised Baseline” scenarios that were previously exposed February 24th, 2021
4. Reduce short and long inversion frequencies relative to the Revised Baseline
5. Reduce frequency of other Yield curve shapes (i.e. bowls and humps) relative to the Revised Baseline
6. Ensure that 30-Year Yield can stay below December 2020 levels (i.e. 1.65%)
7. Avoid generating a substantial probability of negative Yields for longer tenors (i.e. 10+ years)
8. Increase probability of 10%+ Yields for all tenors relative to the Revised Baseline
9. Avoid generating substantial probability of Yields over 25%
10. Adjust 20-Year Yield target (MRP) to be based on the median rather than the mean to be consistent with the AIRG target
11. Adjust Term Premiums to align with MRP methodology
<table>
<thead>
<tr>
<th>Nature of Target</th>
<th>Low for Long</th>
<th>High for Long</th>
<th>Negative Yields – Frequency and Magnitude</th>
<th>Inversion Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Reversion Speed</td>
<td>Slower = Higher Probability</td>
<td>Slower = Higher Probability</td>
<td>Slower = Higher Probability</td>
<td>Slower = Higher Probability</td>
</tr>
<tr>
<td>Volatility</td>
<td>Higher = Higher Probability</td>
<td>Higher = Higher Probability</td>
<td>Higher = Higher Probability</td>
<td>Higher = Higher Probability</td>
</tr>
<tr>
<td>Shift Parameter</td>
<td>Higher = Lower Probability</td>
<td>Higher = Higher Probability</td>
<td>Higher = Lower Probability</td>
<td>Minimal</td>
</tr>
<tr>
<td>Shape Parameters</td>
<td>Steeper = Lower Probability</td>
<td>Steeper = Lower Probability</td>
<td>Steeper = Higher Prob. for Short Yields, Lower for Long Yields</td>
<td>Steeper = Lower Probability</td>
</tr>
<tr>
<td>Mean Reversion Parameter (MRP)</td>
<td>Minimal*</td>
<td>Minimal*</td>
<td>Higher = Lower Probability</td>
<td>Minimal</td>
</tr>
<tr>
<td>Term Premiums</td>
<td>Minimal**</td>
<td>Minimal**</td>
<td>Larger = Higher Probability</td>
<td>Larger = Lower Probability</td>
</tr>
</tbody>
</table>
Next Steps

1. The ESG Drafting Group will continue to review scenario output from additional calibrations of the GEMS Treasury model

2. Once the group has settled on a set of recommendations for the Treasury model and associated set of scenarios, the recommendations will be brought to a joint open meeting of the Life Actuarial (A) Task Force and Life RBC (E) Working Group