

C-3 Work Group Update

Link Richardson, MAAA, FSA
Chairperson, C-3 Work Group
American Academy of Actuaries



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Discussion Topic

- The Academy C-3 Life and Annuities Work Group (C-3 WG) has a request from the NAIC Life Risk-Based Capital (E) Working Group (LRBC) to “Update the current C-3 Phase I or C-3 Phase II methodology to include Indexed Annuities.”
- The C-3 WG has developed high-level conceptual recommendations with respect to this request and would like to discuss them with the Life Risk-Based Capital Working Group (LRBC) before proceeding to develop the specifics of the recommendations.



Discussion Outline

- 2015 C-3 Phase 1 (C-3 P1) Field Test Recap
- Highlights of C-3 Phase 2 (C-3 P2) changes since 2015
- Key remaining differences—C-3 P1 versus C-3 P2
- Scenario considerations
- High-level recommendations and steps
- Analysis considerations
- Key questions for LRBC



C-3 Phase 1 Field Test Recap

- 2015 Field Test used 9/30/2014 models and scenarios, and essentially tested Phase 1 in the then-current C-3 Phase 2 framework
- Participation was made mandatory for large companies via Risk-Based Capital (RBC) Instructions, with results due in the February RBC filing
- Tested 200 “VM-20” interest rate scenarios
 - Key difference was Mean Reversion Point (MRP) of 4.00%, down from 6.55%
 - Resulting C-3 requirements were significantly higher, likely due to reinvestment effects for long-duration products, from lower MRP
- Also tested conditional tail expectation (CTE) 90 metric, versus 92nd through 98th percentile (with heaviest weight at 95th)
 - Change in metric made little difference to results



C-3 Phase 2—Highlights of Changes since 2015 Field Test

- Interest rate scenarios now prescribed
- CTE 90 metric changed to 25% of (CTE 98 minus CTE 70), from same distribution, except for tax adjustment
- C-3 Phase 2 was silent on default costs before the Field Test. The use of expected defaults and no AVR for Phase 2 was made explicit at the time of the Field Test. Default costs are now prescribed using VM-20 assumptions at CTE 70 levels
- RBC Standard Scenario eliminated, but Reserve Additional Standard Projection Amount (ASPA) doesn't reduce RBC
- Working Reserve (WR) set to zero, instead of Cash Surrender Value (CSV)
- Lower Error Factors allowed for implicit method of reflecting hedging
- Smoothing now applies to RBC instead of (CTE 90 – CSV)
- SSAP 108 allows hedge accounting for derivatives hedging VA guarantees



C-3 Phase 1 Versus Updated Phase 2—Key Differences

- ❑ C-1 charges at expected levels vs. CTE 70
- ❑ Economic Scenario Generator (ESG) Mean Reversion Point (MRP) 6.55% vs. formulaic currently 3.50%
- ❑ Capital requirement based on approximately CTE 90 vs. 25% of (CTE 98 minus CTE 70)
- ❑ Surplus in projections based on reserves vs. WR of zero
- ❑ Minimum RBC is 50% of factor-based amount vs. implicit floor. As a practical matter, $C3P2 = 25\% \text{ of } (\text{CTE } 98 \text{ minus } \text{CTE } 70)$ will always be positive, because the values come from the same distribution.



Scenario Considerations

- The 2015 Field Test specified 200 identical interest rate scenarios for all companies. Most companies run 1,000 scenarios for C-3 P2. A two-dimensional stratification (interest rates and equity returns) was developed for the 2015 Field Test, but not used because Indexed Annuities were excluded, which eliminated the need for equity scenarios.
- Use of the two-dimensional 200-scenario framework is recommended, and would allow for comparisons to both the current 50-scenario C-3 P1 framework and the typical 1,000 scenarios for C-3 P2.



High-Level Recommendations

- Repeat the 2015 C-3 Phase 1 Field Test, in 2021 for 9/30/2020 models, but using the updated C-3 Phase 2 framework and including Indexed Annuities along with all products currently in scope for C-3 P1.
- Continue mandatory participation, but change the timing to occur after year-end work is largely complete. Results could be due with the June RBC filing instead of February.
- Model hedging as it is modeled for cash flow testing (CFT), until VM 22 hedging guidance is available.
- Develop specific recommendation for treatment of reserves not equal to a CTE 70 basis. The Total Asset Requirement (TAR) framework is suited to handling differing levels of reserve conservatism but is complicated by the change to 25% of (CTE 98 minus CTE 70).
- Consider a more comprehensive PBR and C-3 Field Test including all products, once a new ESG is available.



Field Test Steps

- Gather C-3 Phase 1 model results from 9/30/2020, under the current framework, as a basis for comparison
- Run all 200 scenarios instead of just 50. Compute the current metric and CTE 98, 90 and 70 metrics for each step
- Run 200 scenarios from the current NAIC ESG, with two-dimensional stratification (interest rates and equity returns)
- Use CTE 70 default costs from VM-20
- Use VM-21 discounting or direct iteration
- Set Working Reserves to zero
- Run Indexed Annuities incorporating steps above and using CFT approaches for other remaining elements such as hedging
- Some companies may be able to run 1,000 scenarios for the final step, as well as the 200
- Analyze results and develop a final recommendation



Results Analysis Considerations

- Regulators and the Academy WG should develop a useful set of filing requirements and questions to facilitate and elicit participants' comments on their own results. For example:
 - ▣ Results by model or product group would be helpful to analysis efforts.
 - ▣ Present values of ending surplus can be a useful indicator of the potential margin before deficiencies would develop, for scenarios where there is no deficiency.
 - ▣ Results with projected reserves, and with working reserves equal zero, can help with analysis of the significance of this choice.
- Confidentiality was provided via the RBC filing approach in 2015, and would likely be suitable again, if NAIC staff and regulators can perform work on summarization and aggregation of results.
- If the High-Level Recommendations and Analysis Considerations are acceptable, the Academy C-3 WG can begin drafting of proposed Instructions.



Key Remaining Questions

- ❑ Should Field Test be mandatory?
- ❑ Who will collect and analyze submissions, and how will confidentiality be addressed?
- ❑ How to resolve differences among C-3 Phase 1 and Phase 2 default costs and C-1 Bond proposal Risk Premia?
- ❑ How to resolve differences between VM-21 and VM-22?
- ❑ Are formulaic reserves appropriate for use in the C3 calculation: 25% of (CTE 98 minus Reserve)?



Questions?

- Link Richardson, MAAA, FSA
Chairperson, C-3 Work Group
American Academy of Actuaries
- Contact: American Academy of Actuaries – Devin Boerm,
Boerm@actuary.org

