

November 8, 2023

Ms. Rachel Hemphill, Chair, Life Actuarial (A) Task Force (LATF)

Mr. Philip Barlow, Chair, Life Risk-Based Capital (E) Working Group (Life RBC)

Mr. Mike Yanacheak, Chair, Generator of Economic Scenarios (E/A) Subgroup (GOES Subgroup)

National Association of Insurance Commissioners (NAIC)

Dear Ms. Hemphill, Mr. Barlow, and Mr. Yanacheak,

I wish to offer these comments on GOES Stylized Facts and Acceptance Criteria exposed on 10/5/23 (the “exposure”).

General comment

The role of stylized facts in forming acceptance criteria appears to be completely misunderstood. The acceptance criteria that are proposed are calibration criteria only, and do not include reference to many of the stylized facts, making it unclear why the stylized facts are included at all.

Stylized facts are important and play a central role in evaluating whether a generator is appropriate for the purpose at hand. The first and most important acceptance criteria should be that the generator’s stochastic process is capable of reproducing behavior consistent with the stylized facts. Only after that first and most important acceptance criteria has been met do calibration criteria come into play. The exposure completely fails to mention the first and most important acceptance criteria.

Stylized facts describe historical behavior, and the purpose of a real-world generator is to produce scenarios that simulate real-world behavior. A generator whose stochastic process is incapable of simulating important aspects of historical behavior is unacceptable no matter how it is calibrated. Evaluating a stochastic process against stylized facts is a very technical endeavor and is easily skipped over by those without the needed technical background in stochastic processes. I say this because last year I documented several reasons why Conning’s real-world interest rate generator fails to be consistent with historical behavior and should be rejected on that basis alone. Those comments have had no effect on this discussion, perhaps due to their technical nature. You can download those comments [here](#).

Stylized facts can be used to guide the design of a generator’s stochastic process. I have written a short book illustrating how that can be done for an interest rate model. Chapter 3 of [this book](#) explains step-by-step how stylized facts can guide the design of the stochastic process for an interest rate model.

Specific comments on each sub-model

Interest rate model

The Treasury model acceptance criteria for low interest rates are far more extreme than anything that has ever been historically experienced and, if enacted, will undoubtedly change the insurance market to make products with interest rate guarantees less available and less affordable than they are today.

- “All maturities could experience negative interest rates”. The lowest long-term rates ever experienced were in July 2020 when the 20-year rate was 0.98% and the 30-year rate was 1.20%. Since market prices for long term fixed-income maturities are based on expectations of future interest rates, a price consistent with a zero 30-year spot rate implies an expectation that interest rates will not exceed zero at any point in the next 30 years. I believe that is an unreasonable expectation and an unreasonable scenario. Zero or negative interest rates for long term fixed income securities are unreasonable and should not be required as an acceptance criteria.
- The low-for-long criteria based on the 12/31/20 starting yield curve requires a model calibration that deviates very far from historical behavior. I am not aware of any analysis supporting a 10-year geometric average rate in the future that is below the lowest single year-end rate ever recorded 10% of the time. It appears that such a requirement was simply pulled out of the blue based on some sort of intuition.

Conservatism in the principle-based approach comes from the choice of CTE level at which reserves and capital are set. The CTE level only has meaning if the underlying generator is calibrated in a realistic fashion, based on history, without adding intentional conservatism. It appears to me that these acceptance criteria are a clear attempt to add intentional conservatism to the calibration, thereby weakening the theoretical foundation of the whole principle-based regime.

Equity return model

I applaud continued use of the existing calibration criteria.

I would note that the criteria do not depend on starting conditions such as the starting level of interest rates. This is an important decision, because the model Conning put forward does produce scenario sets that depend very strongly on the starting level of interest rates.

Corporate model

Stylized fact 1a says “Credit markets tend to be cyclical with elevated defaults and migrations at the end of credit cycles. Credit-related losses tend to be “lumpy” or episodic.”

I consider this stylized fact to be important because the lumpy nature of credit losses presents an elevated risk to insurers when such lumps of losses occur in a short period. Yet there is no reference to this stylized fact in the acceptance criteria.

Thank you for the opportunity to provide these comments.

Regards,

Stephen J. Strommen FSA, CERA, MAAA