Introduction

Welcome to the first edition of the ARM quarterly newsletter! We hope to make this publication valuable to you with several brief articles that provide unique insights, some ideas about how to address specific problems and introduce potential risks that may not yet be on your radar.

The primary authors will be Dave Ingram and Max Rudolph, along with a number of additional ARM consultants. We have been active participants in the risk management, actuarial, investment and insurance spaces for many years. We plan to share our experience and knowledge to assist executives from insurers of all sizes and specialties to make better decisions. We expect to present multiple perspectives on issues, but we will always tell you our opinion of the most compelling approach.

Those who become subscribers can suggest topics for articles and ask questions of the authors during our follow-up webinars and discussion sessions. We expect to conduct some surveys, as you see in this issue, as well as walk the reader through methods to think about issues and build out their capabilities to resolve those issues in the future. Ever cognizant of regulatory requirements, leveraging them in ways that add value to your company in practical ways will be our focus.

Published by Actuarial Risk Management (ARM), the Strategic and Risk Solutions for Executives (SRSE) subscription will consist of two paid tiers. The newsletter is free to to all who are interested.

A webcast is available at either the company or individual level, and an offering that extends the general webcast to include a follow-up one-on-one discussion with the newsletter authors is also available.

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We hope you will join us on our journey!

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“While insurers have been challenging by low interest rates and the pandemic, the next few years will see a radically changing environment for insurers. We will be using this provocative platform to identify emerging risks and delve into what we see as the drivers of future success.”

DAVID INGRAM | SENIOR ERM CONSULTING ACTUARY

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Moderately Adverse Conditions

We have generally used a continuation of the current environment as our base assumption. But now, with the encouragement of the NY DFS, that is being treated as worse than "Moderately Adverse" scenario. Insurers need to develop a robust set of stress scenarios to test reserve adequacy that include continuation of current conditions and a variety of variations in experience, not just interest rates.

As interest rates have fallen, the term moderately adverse conditions (MAC) has become a hot button surrounding asset adequacy testing for life insurers. For 2020 filings, the New York Department of Financial Services (DFS) provided a safe harbor replacement that grades the yield curve to a higher level than current rates for the level scenario and told insurers they would need to pass it. This implied that the level scenario for 2020 could be considered beyond moderately adverse.

Rates rose during 2021 enough to negate the safe harbor scenario but passing level and down scenarios remain a challenge for many insurers. In the American Academy of Actuaries regulatory ALM survey from 2020, respondents were split about whether the baseline level scenario was beyond moderately adverse, and no standard convention has emerged since then.

When you ask most actuaries, they focus on the level of interest rates not being likely to remain so low for the entire testing period. While economists could debate the NY approach and the actuaries' perspective, the focus of this short article is how actuaries could use their internal models to add value at their firm by better understanding the risks and rewards specific to their block of business.

The simple Reg 126 interest rate scenarios designed 30 years ago need to be expanded or replaced. The NAIC could require companies to allow negative rates at levels recently seen elsewhere in the world. A climate change scenario could incorporate lower economic growth rates, aging demographics and low fertility rates. Forced immigration and its ramifications due to heat and sea level rise will be key considerations in that narrative. This is how the ORSA regulations could be useful. Liquidity and defaults should be stressed, either using a moving scale or applied as an instant recession button (what happens if we have a recession on the first day of a scenario).

Actuaries and other modelers need to up our game and test scenarios beyond interest rates. We act as economists at our firms but often have only a course or two from college and six months of study during our credentialing process. Taking a broader approach will be more useful for strategic planning purposes.

What methodologies would add value to the insurer? Stochastic scenarios can be useful, but let's focus on narrative-based deterministic scenarios that improve decision making. What story do you want to tell your CEO or board?

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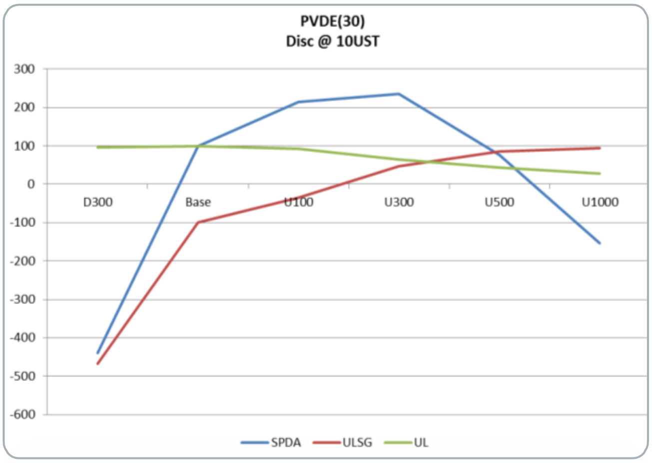
Moderately Adverse Conditions

Let's start with interest rates and then expand the discussion.

In a paper written by the Society of Actuaries (2015), a model office was built and six interest rate scenarios designed to tell a story. For example, if a down scenario is bad for a block of business you don't need to run multiple scenarios to show that. Pick scenarios that provide nuance to the story. Here is an example from that paper.



In the figure, PVDE(30) is the present value of distributable earnings (statutory income, after taxes, after change in target surplus), discounted over 30 years at the 10 year Treasury rate. It is a metric to reflect current value. Base is the level scenario normalized to 100 (or -100), D300 means immediate pop down 300 bp, U100 is pop up 100 bp. SPDA is single premium deferred annuity, UL is universal life, USLG is universal life with secondary guarantees.

The shapes generate a much easier discussion with senior management or a board that may not have a strong modeling or mathematics background.

You could change multiple assumptions at the same time to simulate a cluster of risk events occurring. Creating a narrative constructs a scenario that ties together many features. One economic growth scenario set (Hillebrand/Closson 2015) looked at energy prices (low/high), economic growth (weak/strong) and geopolitics (global harmony/disharmony) to create eight scenarios, with probabilities attached.

You need to create a picture that helps senior management make decisions. For interest rate scenarios in today's low environment, for a going concern business these scenarios might make sense:

- Pop down 3% with no floors (rates can go negative in all scenarios)
- Level
- Pop up 3%
- Add additional Pop up scenarios until you have hit a maximum value (perhaps up 1% 3% 5%)
- Finally, create at least one scenario with a value lower than the Base

Other assumptions can also be tested. Examples might include single year scenarios that test liquidity as well as solvency (Ernest Hemingway had it right in The Sun Also Rises. "How did you go bankrupt? Gradually, then suddenly.")

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Moderately Adverse Conditions

- Equities down 50%
- Mortality or morbidity higher by 1%
- Asset defaults double
- Your top reinsurer is unable to pay claims

Finally, some narratives might be built that stress multiple assumptions or lines of business.

- Recession – war in eastern Europe expands into the Middle East, with oil prices triggering inflation and central bank solutions ineffective
- Climate change follows SSP3-7.0 narrative, increases sea levels by X inches, storm intensity by Y% and drought – food insecurity becomes part of daily life for many

In addition to asset adequacy testing and Own Risk Solvency Assessment (ORSA), another source of scenarios is banking regulations. Their time horizon is quite short and they focus on testing single risk deterministic scenarios, but the narrative must be consistent. For example, how would a drop in GDP impact defaults, inflation, interest rates, or even mortality and morbidity assumptions? Where would you find liquidity? It's like your company had a heart attack – would you survive? Becoming aware of banking scenarios and consciously deciding to pick out some pieces to manage your internal ALM and ERM needs could be useful.

Moderately adverse conditions are defined in (the soon to be effective) ASOP22 as those "that include one or more unfavorable, but not extreme, events that have a reasonable probability of occurring during the testing period." Judgement is needed, but the focus is on adding value to your company, so there is no need to do anything but test actual risk exposures.

Modelers can add value through a well-thought-out set of narratives that will aid decision making. Managing risks is just as important as creating returns.

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