



SOCIETY OF ACTUARIES

Article from:

# Risks & Rewards

August 2014 – Issue 64



## THOUGHTS FROM THE 2014 INVESTMENT SYMPOSIUM

By Avi Freidenreich

---

**W**hen the iPad first was released, I was a skeptic. Yet, ever since my wife bought me one, I see why they are so popular. It enriched my experience at the symposium by allowing me to integrate my thoughts from the symposium with the presentation slides, making it easier to ponder at a later time.

I enjoyed the conference and its various sessions. I learned some new methods and gained valuable insights, even if at first it seemed hard to apply much to my current responsibilities of building stress-testing scenarios. While that was initially disappointing, there are a few seemingly unrelated nuggets of knowledge that I gleaned from the symposium that may bear fruit in the future.

A very simple example was from the session titled “Inflation or Default.” Here, the speakers provided various macroeconomic relationships that may assist me in thinking about designing an integrated scenario that reflects the historical relationship between interest rates, inflation and gross domestic product (GDP). More importantly, understanding various demographic, cultural and economic differences between countries will help in tailoring a relationship specific to various economies.

It’s important to look past the topic itself and realize that there are various concepts from each session that can be combined with other ideas to form something useful. For example, there were additional techniques discussed in two of the sessions that could be leveraged for solving other, perhaps unrelated, problems.

In “New Techniques in Quantitative Portfolio Management,” Richard Michaud offered not one, but really two provocative approaches. The Michaud method for developing efficient frontiers utilizes simulations and resampling in order to develop more stable frontiers. These simulation methods help the user deal with the uncertainty in the parameters, which ultimately causes the optimal portfolio implied by the frontier to only be one representation of possible optimal

portfolios given the data. Sampling is then used to create a better representation of the various optimal portfolios that would make up the “universe” of possible optimal portfolios.

With that universe comes the Michaud-Esch method. The need was to determine the right time to rebalance a portfolio. With one optimal portfolio that is highly unstable, rebalancing would occur often. However, recognizing the fact that your optimal portfolio is only one possible instance of the true optimal portfolio, it may not truly be correct to rebalance. By looking at the simulated “universe” of portfolios one can determine how likely it is that the current portfolio is no longer optimal and then react more efficiently.

Another session offered a few memorable techniques to improve the speed of stochastic-on-stochastic calculations. These include compression of a portfolio into representative policies and the use of polynomial models for interpolation. Interestingly, this technique is based on Kriging, which is a statistical interpolation technique extensively used in geostatistics.

There were also various minor concepts, which, while not being the main focus of the presentation, could help provoke new thoughts of possible emerging risks, which may be useful in developing forward-looking stresses or certain endogenous relationships between factors. For example, in the first session on regulatory updates one item mentioned was about a change that Dodd-Frank will have on the collateral requirements of various companies. Essentially, as a result, there will be a much greater reliance on Treasuries, which may have a further impact on liquidity premiums embedded in Treasury yields. As another example, Robert Merton, in his keynote address, offered his view that many homeowners will ultimately need a reverse mortgage to fund their retirement as they may not have enough savings otherwise. The question that can be posed is: What will be the ultimate impact on the housing market and its relationship to other markets? This, of course, is not a sudden

## BY USING AN INFERIOR MEASURE, THE INDIVIDUAL GETS THE WRONG MESSAGE AND CANNOT REACT APPROPRIATELY.

impact, but something more gradual that may play out over time. Finally, one item mentioned during the “Economic and Market Update” session led me to wonder: What will be the ultimate impact on the economy of the huge growth in student debt that may crowd out further uses of debt by that cohort? There are, of course, other examples as well.

A final observation from two of the sessions, that may not be directly relevant to my work, instead reinforces an appropriate mentality of any actuary. First of all, in the session on risk parity, the idea of decomposing asset classes into their risk factors is an important concept. Not that this is a new concept, but it’s important to remember that when we measure something, the units of measurement matter.

One of the main points of Merton’s address was that savers need to be concerned over future real income units and not account value in a retirement fund. Merton’s example was that a decrease in interest rates could theoretically boost account values; however, this will also increase the price of an annuity at retirement (the ultimate objective) and thus an individual may be worse off in those times. By using an inferior measure (account value), the individual gets the wrong message and cannot react appropriately (by saving more). This is something that everyone who provides measurements for analysis needs to consider, and for myself in risk management, it is a mindset that I must espouse.

So, in actuality, there was a lot of material that could be useful to me; but it takes a second look and additional thought to develop. In the end, it may be better that way, as it will ultimately lead to further improvements and innovations by provoking active thought as opposed to passive learning. Therefore, having time for the attendees to mingle and to discuss what they have just learned is useful since it will help stimulate those new thoughts.

This perspective also provides a motivation for ensuring the presentation slides and either recordings or transcripts are available online. These tools allow those in attendance to

return to the material in order to make those additional connections and add to what was presented. Indeed, having the slides on my iPad was a significant help. I was able to tote around my tablet. It wasn’t too bulky or heavy; it fit in my bag very easily; it was quick to shut off and on between sessions; and it had enough battery life to last the whole day. For those presentations that were available (unfortunately, some weren’t), my notes are now integrated as part of the PDF slides themselves. Not only did this help me during the presentation itself, it improved my ability to return to it in the future (like as I write this). Thus, innovations will beget innovations as hopefully the thoughts from the symposium will help to create new ideas in the future. 📖



---

*Avi Freidenreich, FSA, CERA, is a director and actuary in MetLife’s Market Risk and Derivatives Strategies department. He can be reached at [afreidenreich@metlife.com](mailto:afreidenreich@metlife.com).*

---