Article from

Predictive Analytics and Futurism

December 2015
Issue 12

2005 Delphi Study—Reflections 10 Years Later

By Steven W. Easson

This October marks the 10th anniversary of the release by this Section, called the Futurism Section at the time, of the study titled, "A Study of the Use of the Delphi Method on Economic Variables, A Futures Research Technique For Forecasting Selected U.S. Economic Variables And Determining Rationales for Judgments."[1] As chair of the study's Project Oversight Group (POG), I thought it would be an auspicious time to reflect on this study. I am writing this article to share my experiences and perspectives, mainly with the goal to try to motivate SOA members to further increase their interest and passion in the section's activities.

First a little background. In 1999, I was elected to the Futurism Section chaired by (the late) Mr. Bob Utter. His full-time day job involved futures research and his passion for the field of futurism truly inspired me. I absorbed the 2000 Part 7 Study Note on Applied Futurism by Alan Mills, FSA, and Peter Bishop, Ph.D. with great interest. I also kept up to date on initiatives of the World Futures Society and the "Millennium Project" among others. When I was elected chair of the Futurism Section for 2001-2002, I immediately gathered and read through all of the section's past newsletters since its inception in 1983 (the second section formed, after only the Health Section). By doing so, it became apparent that the section had continuing challenges in finding its mojo. I concluded a solution was application, application, application, à la the real estate mantra of location, location, location. To make a long story short, it took approximately two years to sell the idea, obtain funding,[2] formulate the POG, conduct the RPF process in recruiting our "Principal Investigator," and then approximately 1.5 years to conduct the study.

The Delphi Method, very briefly, is in essence a multi-round controlled debate among experts, preferably as multi-disciplinary as possible. The anonymous feedback of participants' rationales between rounds is the key to success. The goal is to not necessarily derive consensus, rather it is to continue rounds until there is a "stability" of the "fan of plausible scenarios" identified by the participants in the study. This provides management with valuable insights for setting both business and risk management strategies and tactics in the context of multiple plausible scenarios.

From my perspective, the primary goal of the study was to educate SOA members on the Delphi Method through outlining its key characteristics and demonstrating its application to a pertinent topic to actuaries. This in the hope it would motivate actuaries to utilize futures research techniques for many various applications. In my mind the usefulness of the study's results was secondary and within that I viewed the qualitative opinions and rationales for judgments as equally or even more valuable than the quantitative results in many instances.

The study was designed to obtain insights into the rationales and thought processes experts use in making judgments about the long range (20 year) values of four U.S. economic variables: Annual increase in the Consumer Price Index; 10 Year Treasury Spot Yields; S&P 500 Total Rate of Return; Corporate Baa Spot Yields. Round one was sent to the participants in November 2004 and round two in March 2005 (note, at a time of seemingly increasing prosperity).

So, how did we do, both qualitatively and quantitatively? First, two caveats. Upon reflection, I believe the study's results could have been more credible if the forecast period was not as distant as 20 years into the future (i.e., 2024) and if it was not at a point in time.

Rather an average over a period would have been better; perhaps the average over five to 10 years in the future, (i.e., 2009-2014). Secondly, in the interests of brevity for this article, my outline below is necessarily a very small subset of the enormity of the results (as listed in the study's report).

Qualitatively, there were interesting and in some cases very disparate views on many issues, for example among many, the leadership role of the U.S. and its fiscal situation, inflation rates including those for energy, the influence of the Fed to control inflation and avert global recession, currency exchange rates and productivity advances.

The Trend Impact Analysis (TIA) Method was used in conjunction with the Delphi Method to derive the quantitative results. The TIA Method utilized the plausible future developments identified in round one of the study along with round–two–obtained associated probabilities and impacts to produce median estimates and confidence intervals. In essence, the opinions, rationales and judgments from the expert panel were widely separated which led to the wide ranges below. The study's conclusion that the variables are intrinsically (that) uncertain was perhaps not a bad conclusion. Given the recent one–in–many–years or many standard deviation economic and financial results, these wide confidence interval ranges, even at the 80th percentile, do not seem as implausibly wide to me as they did in 2005, and, in fact, in today's environment, the results were perhaps not as extreme as they could have been (e.g., no one foresaw the possibility of negative fixed income yields)!

- CPI: 0.6 percent to 9.9 percent.
- 10–year Treasury Spot Yield: 3.3 percent to 11.4 percent.
- S&P 500 Total Rate of Return: –20.2 percent to 23.1 percent.
- Corporate Baa Spot Yield: 3.8 percent to 14.8 percent.

The study would not have been a success without the efforts of many individuals. At the top of the list was our "Principal Investigator," Mr. Theodore J. Gordon. Mr. Gordon is an acknowledged pioneer in the field with his successes dating back to a Delphi study he co-authored for the RAND Corporation in 1964. The write up on Wiki on the Delphi Method acknowledges him. Throughout the project, Mr. Gordon expressed high enthusiasm and patience with the POG in expanding the scope of his report without a hint of objection to spending more time than targeted without getting paid. Also the POG members (Jack Bragg, Mark Bursinger, Sam Cox, Steve Easson, Doug French, Jack Gibson, John Gould, Phil Heckman, Steve Malerich, Jim Reiskytl, Mark Rowley and Max Rudolph) were highly engaged throughout the project despite its protracted period. Finally, Ronora Stryker and Jan Schuh of the SOA expertly handled the management of the project.

Subsequent to this study's release, there have been a number of successful studies performed by the SOA as follows:

- Blue Ocean: *http://www.soa.org/research/research-projects/life-insurance/research-blue-ocean-strat.aspx*
- Mortality Risk Differentials: *http://www.soa.org/Research/Research-Projects/Life-Insurance/research-ind-mort-risk.aspx*
- Long Term Care: *http://www.soa.org/Research/Research-Projects/Ltc/research-2014-ltp-ltc.aspx*
- Delphi Studies in Pandemic flu research: *http://www.soa.org/research/research-projects/life-insurance/research-impact-pan-influ-life-ins.aspx*

Finally, I would like to set my mind back to 2005 and contemplate the future. My "fan of plausible scenarios" did not foresee the enormous advances the section has made in expanding the scope of futures research techniques and its applications. I have to congratulate all Section Council members over the 10 years for the section's successes. Related, I am surprised the membership of the section has not expanded substantially. Futures research techniques are fascinating and will have increasing relevance, so my current "fan of plausible scenarios" includes this section's membership will be one of the highest among SOA sections over the next few years. ■

ENDNOTES

1 The comprehensive (142 page) report on the study can be obtained at:***http://www.soa.org/files/research/projects/delphireport-finalversion.pdf***

2 From the Futurism Section, the Investment Section, and, as they were known at the time, the Committee on Finance Research and the Committee on Knowledge Extension Research.

Steven W. Easson, FSA, FCIA, CFA, is vice president and chief actuary at Canadian Life & Health Insurance Association Inc. in Toronto, Canada. He can be reached at *seasson@clhia.ca.*