

*The aim of this LTC Section sponsored research is to advance insight into Long-Term Care pricing and experience. The first report, authored by Actuarial Resources Corporation of Kansas, illustrates how the risks of LTC insurance can be understood through modeling its liabilities using a Monte Carlo simulation approach. The second report, authored by PricewaterhouseCoopers LLP, discusses both conceptual and practical aspects of experience volatility and provides a basis for actuaries and management to understand and interpret volatility in LTC insurance experience.*

*Both reports were produced in response to an RFP from the section titled “Understanding the Volatility of Experience and Pricing Assumptions in Long-Term Care Insurance.” Each paper will provide the reader insight into approaches that can be taken to better understand the risk characteristics of LTC insurance products and provide approaches for evaluating experience fluctuations. The following two articles are teasers for Long-Term Care News readers. The completed research papers can be found at <http://www.soa.org/research/research-projects/ltc/research-2014-understanding-volatility.aspx>.*

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## Lessons in LTC Volatility

By Rachel Brewster



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In the fall of 2013, the Society of Actuaries Long-term Care Insurance (LTCI) section commissioned a project to assess the “Volatility of LTC Pricing Assumptions.” This project has resulted in two papers addressing this topic. Being involved with the writing of one of these papers has led me to think back over my time working in LTCI and how my views regarding the effect of volatility and uncertainty have evolved over this time. It has been the challenges involved in projecting future assumptions that have drawn me to work with this product.

As all actuaries know, the reasons for possible deviations from expectations are numerous. The main related questions addressed in these papers are: (1) What has driven these larger deviations from expectations for LTCI? (2) How can actuaries differentiate between poor experience being due to the inherent volatility resulting from random fluctuations falling within a reasonable range of current assumptions versus these assumptions not accurately reflecting the future? (3) How does product design affect the results of this volatility? (4) How can this information be used by companies, or regu-

lators, to measure and assess the effects of possible adverse deviations?

The first conversation I ever had involving LTCI was when I was interviewing for an actuarial student rotation position in a LTCI pricing department. During that conversation I discussed with my future boss some of the key challenges involved with this product. I keenly remember discussing lapse rates and how the original pricing assumptions were significantly higher than what was being observed. When most people initially hear about this difference, the questions typically raised are: “Why was the earlier expectation so different from what was experienced? Shouldn’t the actuaries have had better foresight?”

Four important factors relating to LTCI that need to be recognized are: (1) even after more than thirty years the product is still relatively immature, (2) the difficulty in aggregating credible amounts of relevant data, (3) changing attitudes toward care, and (4) the challenges of administering its claims.

With life insurance, another common insurance product with a long duration, the data available



to measure mortality is vast and mature. Also, the decision as to whether to pay out a life insurance policy is pretty black and white. On the other hand, LTC benefit eligibility triggers and underwriting have differed by product generation, which together with evolving claim administration practices have resulted in a challenge to aggregate into long-term assumptions. The most comparable product in terms of data would be regular medical insurance, which has a much shorter duration that allows an insurer to incorporate recent experience more quickly into future pricing. These limitations around the data and the product's life cycle need to be recognized by actuaries in the pricing and product design of LTCI policies.

Within the roles I have had working in actuarial pricing departments, I have felt that it was my job as an actuary to identify those product features that provide incentives to take advantage of the product for purposes they were not originally designed to meet, thus encouraging over-utilization by policyholders. For example, within various deferred annuity products, it is important to take into account the likelihood that policyholders will surrender their policies at the most disadvantageous time for the insurance company. In LTCI, it is also important to identify product features that promote similar anti-selective behavior. One of my most memorable LTCI pricing tasks involved pricing a

product feature that I thought would be easily taken advantage of, which would have brought with it unanticipated long-term financial consequences to the insurer. In part it may have been memorable due to the fact my bosses had not previously identified this effect, which highlights the challenges that pricing actuaries have in their roles.

These papers provide actuarial concepts, analytical tools, and practical considerations that take into account the wide breadth of experience of the authors, which should generate further dialogue around the basis for and consequences of volatility within LTCI. ■