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What's New In Research?

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The issues affecting today's product development actuary are numerous and fill the pages of each issue of *Product Matters*. They are also fueling the need for the latest information, insights and tools to help product development actuaries address these issues and adapt to the changes they create. In the last year-and-a-half alone, the Product Development Section has responded to member needs by initiating or cosponsoring eight research projects covering a multitude of topics.

Several of the projects underway focus on mortality improvement and the growing retiree market. One study being cosponsored with the Committee on Life Insurance Research, examines the implications of public perceptions on post-retirement risks to life insurance product development and marketing strategies. This is expected to be completed this fall.

Partnering with the Actuary of the Future Section, another study is a two-phase initiative exploring financial advice issues related to the middle-to-lower income market segments. In Phase I of the project, the primary objective is to examine why it appears that appropriate financial advice is generally not available to these segments of the American public. For Phase II, the goal is to use what is learned from Phase I and

explore alternative ways for providing such advice. Since this project is in the early stages, no timetable for completion has been set.

A recently completed project supported by the Section focuses on longevity risk. Authored by the Ernst & Young team of Thomas Crawford, Richard de Haan and Chad Runchey, the research paper summarizes results of a literature review and addresses topics including the emergence and quantification of longevity risk; current and future risk management techniques; and products currently in the market that are exposed to longevity risk. To view the report in its entirety, see the SOA Web page: <http://www.soa.org/research/life/research-long-risk-quant.aspx>

Other research projects fall into the broad topic area of new pricing and underwriting methodologies and studies to assist in assumption setting. Just underway with the Marketing and Distribution Section is phase one of a two-phase study exploring mortality risk selection using an electronic personal history interview (drill-down application) coupled with e-data (MIB, Rx, MVR). In the first phase, a company survey will be performed to determine practices of life insurers utilizing these electronic underwriting tools as well as the type and amount of data that would be available

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for further study. The results of Phase I will be used to investigate the feasibility of Phase II, which studies how mortality risk selection outcomes utilizing these electronic underwriting tools compare qualitatively to that using more traditional underwriting methods.

In addition to the company survey of electronic underwriting practices, research is advancing examining mortality and lapse experience in the post-level period of individual level premium term life insurance products. A company survey of lapse and mortality assumptions is coming to a close which will be followed by a request for data needed to perform the experience study. Results are targeted to be released by the end of the year.

The last project within this topic area delves into stochastic pricing of embedded options found in life insurance and annuity products. The report by a Milliman research team of Tim Hill, Dale Visser and Ricky Trachtman, investigates the challenges associated with determining a fair value assessment for embedded options in two product types, universal life insurance with secondary guarantees and variable annuities, and incorporates the process into product pricing. This report can be found at: <http://www.soa.org/research/life/research-stochastic-pricing.aspx>.

The remaining projects are in partnership with the Financial Reporting Section and relate to the principle-based approach (PBA) for statutory minimum reserves and RBC that is currently under development by the NAIC. The first project examines the proposed principle-based reserving and capital approach on U.S. life insurance products. Not only will the research look at a comparison of reserves and C3 capital amounts under PBA versus current formulaic standards, it will also

address the modeling challenges encountered in implementing the methodology. The project is progressing nicely with a summary of the research findings expected to be available on the SOA's Web site in September.

Under the proposed PBA framework, individual company experience will be used to determine the proper level of reserves and capital. The application of credibility theory will likely be required in order for actuaries to determine and evaluate the appropriateness of assumptions such as mortality and lapse levels for a company's block of business. The last PBA project involves conducting a company survey of U.S. life insurers on how they are currently using credibility theory as well as a statistical analysis of some of these approaches. Look for results to be available in the fall of this year.

The Section's research activity does not stop with the above projects. Planning is underway to support several additional projects this year. Research projects being considered include, but are not limited to, a call for papers on predictive modeling for life insurers as well as a project examining the cost of implementing PBA.

If you would like more information about any of the projects discussed or are interested in getting involved in Section sponsored research or have an idea for a research project that would benefit Product Development Section members, please contact Ronora Stryker, SOA Research Actuary, at rstryker@soa.org. □