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Appointed Actuaries survey results: Part II
What practices actuaries followed for 1992 reserves

by Donna R. Claire and Maria Thomson

The February *Actuary* included results of Part I of a survey of appointed actuaries sponsored by the American Academy of Actuaries Committee on Life Insurance Financial Reporting and the Society of Actuaries Financial Reporting Section. This article summarizes Part II of the survey, which asked what the appointed actuary did for asset adequacy testing.

Responses came from 140 actuaries. Thirteen people, or about 10% of those responding, stated that reserves were increased as a result of testing. This implies that some people did discover asset adequacy problems.

Asset testing

Some questions involved asset modeling. Of those replying, 93% had 5% or less of their assets in real estate. Only four respondents said real estate was more than 10% of their portfolios, with one stating real estate made up 50% of its assets. Two of these four companies increased the amount of reserves held.

Collateralized mortgage obligations (CMOs) were a popular investment vehicle for the insurance companies. CMOs averaged 16% of the portfolios of the respondents who had them, although 25% of the respondents had no CMOs. About 14% stated CMOs were at least 40% of their assets. Two of those companies put up extra reserves.

One-third had no commercial mortgages in the model. Two companies that put up extra reserves indicated they had a large percentage of assets in commercial mortgages. Of those who modeled commercial mortgages, about one-half used the default rates based on either the AVR rates or some outside study. Some that used their own study indicated they also checked rates with outside sources for consistency.

The survey also asked what assets caused trouble in modeling. Aside from CMOs, the most popular answers were equity-type assets, such as real estate, common stocks, joint ventures, and limited partnerships. Many actuaries' solution to the modeling problem was to put these assets in surplus.

Expenses

The survey asked how people determined that the investment and insurance expenses used were reasonable. Many actuaries compared these expenses to annual statement numbers. Others used their own company's expense survey. Some actuaries said they increased the expense levels for inflation.

One question asked whether shareholder dividends should be reflected in the testing. At least 20% of the respondents tested shareholder dividends. (Some of the other surveys came from mutual companies, where this question was not applicable.) One way actuaries said they determined the dividend amount was to pay out the excess above the target surplus formula.

Liabilities

Most people answering the survey based lapse and morbidity and mortality assumptions on their own company experience. Several also considered industry experience. Some actuaries said they based the lapse assumption on the LIMRA/SOA study on SPDA persistency.

Most people surveyed did not include mortality improvements in the testing. Of those that did, several only included it on the annuity side, where mortality improvements could cause a company to suffer losses. A slightly higher percent of people reflected AIDS in their testing. Some said that separate AIDS reserves already had been set up.

Data

Another question asked about obtaining data. About half the respondents said they had difficulty obtaining data, especially for CMOs. Some who based testing on year-end information mentioned the difficulty of getting accurate data in the time allotted.

About half the respondents mentioned that they used pre-year-end data. September 30 data was the most popular alternative date. Most of these did some sort of reconciliation to year end. Some said they examined all key characteristics of the data, such as the duration and yield of the assets by asset type, and the age-sex-smoker-size status of the liabilities. Others did a more cursory examination. Some actuaries updated their testing for year-end yield curves, since they felt that the interest rates changed enough to warrant the update.

Sensitivities

Most of those surveyed did some form of sensitivity testing. The most popular types of sensitivity testing included lapses, mortality and morbidity assumptions, returns on various asset types such as CMOs, asset default rates, and expense assumptions. Others mentioned testing mortgage prepayments, interest and dividend crediting strategies, and reinvestment/disinvestment strategies. Some actuaries also tested interrelationships, that is, high mortality and high lapses. There were six companies in the survey that increased reserves as a result of sensitivity testing.

Analyzing results

Most people analyzed intermediate results. More than half the people surveyed said they considered the size of the intermediate negatives in relation to surplus.

Several companies only tested the basic seven interest scenarios. Those that did a few more scenarios typically tested inverted interest rate scenarios. Several tested more scenarios, at least for certain lines of business. About one-third of those surveyed did stochastic testing.

Most companies surveyed "passed" all seven basic scenarios. Eight companies failed one scenario, and four of those established extra reserves. Four companies failed two scenarios, and three of those put up extra reserves.

The survey asked how many positive outcomes were needed for the tests to be considered passing. Of those that answered this question, most said all of the basic seven, with some believing that passing was five or six of the seven. For random scenarios, the answers typically ranged between 80% and 100% pass ratio. At least one person pointed out that several factors entered into the equation, such as whether "reasonable" or "conservative" assumptions were used in the testing.

Opinion language

Several people changed at least some of the recommended wording of the actuarial opinion. Some changes were made to give the actuary more protection. Another area changed was in the list of liabilities, adding, for example, cost of collection in excess of loading, net due and deferred premiums, dividend liability, liability for unauthorized reinsurance, and separate account transfers.

Many of these survey results were incorporated into the 1993 Practice Notes detailing current practices in asset adequacy analysis. As more is learned about asset adequacy analysis, current practices will evolve and should provide more useful information to management.

Donna Claire is president of Claire Thinking, Inc., Dix Hills, New York, and a member of the SOA Board of Governors. Maria N. Thomson is managing principal at Thomson Management Solutions, Inc., Palmer, Massachusetts.

Intensive review seminars offered

The following intensive review seminars will be offered in Philadelphia.

Sponsored by Temple University Actuarial Institute

Course 140	April 16-17	Course 200	April 13-16
Course 151	April 7-9	Course 230	April 18-19
Course 160	April 29-30	Course I340	April 6-9
Course 165	April 9-10		

CAMAR (Casualty Actuaries of Mid-Atlantic Region) review seminars of interest to SOA students

Course 100	April 7-10	Course 135	April 22-23
Course 110	April 14-17	Course 4B	March 6-8
Course 120	April 24-25		

For more information, write to Bonnie Averbach, Program in Actuarial Science, Ritter Annex 475 (004-00), Temple University, Philadelphia, PA 19122, or call 215/204-8153.

RESEARCH CORNER

The Research Department is always looking for volunteers knowledgeable in any practice area. If you are interested in more information on being a volunteer, please call the Research Department at 708/706-3573.

Following is an update of recent research activities:

- The final report of the 1986-89 pilot Credit Risk study for private placement bonds and commercial mortgages is available through the SOA Books Department, 708/706-3526.
- Data for the Universal Life Persistency study has been received from 21 companies providing 700,000 policy records. Data validation is continuing, and analysis is scheduled to begin by the end of March.
- Results of the Long-Term Bond Yields study are scheduled to be presented at Session 80, April 22, 1994, at the SOA spring meeting in Orlando.
- A report on the data collected for the Reinsurance Mortality experience study has been completed.
- The eight Requests for Proposals (RFPs) announced in a flyer with the January *Actuary* brought in several proposals to complete specified research projects. The projects included three topics in the health practice area, three topics related to dynamic solvency testing, a retirement systems topic, and a project on multi-life risks.