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Cash flow testing can help with company solvency

by Donna R. Claire

By now, many actuaries are completing, or have just completed, cash flow testing, a frequently used type of asset adequacy analysis which is required by the revisions to the Standard Valuation Law. For some, this was the first time going through an extensive asset adequacy opinion. Much work is involved. Some actuaries may be considering a less stressful occupation right now, like lion tamer or high wire artist.

Look on the positive side — it was a learning experience. For example, when I first did cash flow testing under New York Regulation 126 (which requires cash flow testing for annuities, pensions, and interest sensitive life insurance), I learned that a pizza parlor actually did exist in the middle of New York City that made horrible pizza. I'm not sure that anything would particularly taste good at midnight in a cold building, while watching recalcitrant computers bomb on programs that weren't perfect and using printers that jammed whenever more than two pages had to be printed.

Other lessons learned

More importantly, many have learned that asset adequacy analysis can have a major impact on how companies do business. The results of asset adequacy testing may point out some deficiencies in how a company is run, and a company can take corrective action before the company's solvency is threatened. The companies that responded to a survey done by Robert Callahan of the New York State Insurance Department reported the following actions as a result of cash flow testing under New York Regulation 126:

- 22% of the respondents increased reserves.
- 10% released some reserves.
- About 60% realigned their investment portfolios.
- About two-thirds changed new investments.
- Just over one-third revised new products.

This survey was done based on testing through 1990. Since that time, the Actuarial Standards Board has put additional emphasis on cash flow testing by publishing Standard of Practice No. 7 that requires the actuary to do cash flow testing whenever it is appropriate. This includes everything for which an actuarial report is written, such as product pricing, mergers and acquisitions, and the statutory blank. The revisions in the Standard Valuation Law, effective in 1992 for 10 states, require various forms of asset adequacy analysis from many companies on their entire business. At least another five states will require such testing in 1993.

Significant findings

Some actuaries were surprised at their findings when doing cash flow testing for the first time. Certain actuaries may have found that reserves may be inadequate if interest rates decrease. This may be caused by hitting against the guaranteed interest rates in some plans. (Remember when 6% was considered such a low interest rate there was no problem with guaranteeing this rate for the life of the policy?) Other actuaries may have discovered that reserves may be inadequate if interest rates rise, concluding, like many actuaries discovered in the early 1980s, that there is a tradeoff between crediting low interest rates and having higher lapses. If reserves are inadequate, company solvency may be in danger.

Some actuaries also have discovered that testing discloses problems with certain assets. Some assets may be inappropriate for the type of business being sold. For example, if the company has sold a block of 5-year guaranteed interest contracts (GICs), a residual tranche from 30-year residential mortgages may not be an appropriate investment. It is useful for cash flow testing to point out such asset/liability mismatches before the company's solvency is called into question.

Some problems with assets are due to the complexity of the transactions. For example, certain collateralized mortgage obligation (CMO) tranches are very difficult to model. One regulator had an interesting reply when told about the difficulties of modelling certain assets: "If you do not understand how they can be modelled, why are you buying them?" It is useful to understand how these assets work (and how they can therefore be modelled) to see if the assets are appropriate for the company's particular liabilities.

When is enough, enough?

Another significant finding is the amount of time and work this testing involves. Although significant testing may have been done, the actuary may not feel comfortable because more can always be done. Remember reasonable tradeoffs. Perfection is nice, but unattainable.

The standard of practice and the model valuation law and regulation allow certain business that can be considered de minimis to be exempt from asset adequacy analysis. One also can limit the amount of testing done on certain items that will not significantly impact results.

If an actuary is not sure how much testing should be done, discussions with other actuaries may help. Another source for how other actuaries are handling the cash flow testing are the practice notes prepared by a task force of the Academy of Actuaries Committee on Financial Reporting. The practice notes detail what some actuaries believed were current methods in certain areas of cash flow testing as of 1992.

Forewarned is forearmed

If an actuary discovered any of the above problems after the end of the year and decided that reserves should be increased, he or she probably discovered another significant finding. Management does not like surprises, especially ones with a negative impact

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Cash flow testing cont'd

on the company's bottom line. This points out the importance of testing the product when it is originally priced to discover what the profitability of the product is particularly sensitive to (e.g., expenses, mortality, morbidity, lapse rates, earned rates, or mix of business). These items can be monitored, and corrective actions can be taken as necessary.

Communication between the actuaries and investment people and periodic updating of cash flow testing also are important.

Testing alone not a solvency cureall

Will asset adequacy testing prevent all company insolvencies? Of course not. Asset adequacy testing is not solvency testing, which includes company surplus and expected future business. However, it can help. Cash flow testing is a lot of work. As long as it is viewed, however, as an integral part of the management of the company and not just another bothersome requirement that must be complied with, it can improve the solvency of the insurance industry.

Donna R. Claire is president of Claire Thinking, Inc.

Calling U. of Michigan alumni and friends

The University of Michigan and the Alumni Advisory Group are working to revitalize the actuarial program. The goals are to continue the Mathematics Department undergraduate program, which recently has been graduating about 30 actuarial students annually, and to develop an improved master's program in cooperation with the Business Administration School and other units of the university.

To update the alumni list and to receive future notices, those who were not in the actuarial program while at the University of Michigan and all who graduated after 1979 are requested to send address and phone number to: Susan Smith, 48439 Meadow Ct., Plymouth, MI 48170-3256. Other friends of the program also are encouraged to send similar information.

AVR and IMR cont'd

subcomponents (that is, within the default component or the equity component) up to one-half of the positive subcomponent balance
- Classifying certain money market funds as class 1 investments

A proposal to extend the transition period from three to five years and a small company proposal to defer implementation of the IMR to October 1 received considerable discussion but were not adopted.

The advisory committee prepared answers to commonly asked questions about the implementation of these new reserves. This document is available from the Securities Valuation Office of the NAIC.

Possible changes in 1994 or later

The advisory committee is considering more than 30 items for possible implementation in 1994 or later. The most significant of these items (not in any order of importance) are:

- Implementation of the full actuarially based IMR, likely only with a supporting actuarial opinion. In other words, negative values for the IMR will be permitted under appropriate conditions. It may be useful to recall that the IMR is designed to protect surplus from purely transitory changes created by the events lacking economic substance. These so-called losses are transitory and should have no impact on surplus, since the proceeds can be reinvested at higher yields. Restricting negatives does impact surplus.
- Modification of the formula for the AVR contribution to require (a) a basic contribution equal to the expected defaults for each asset type and (b) an additional contribution that amortizes to a target reserve level instead of a maximum. That is, each year the beginning reserve would be increased by the basic contribution (for expected defaults), reduced by actual defaults, and then amortized by 20% toward the target level. Since over the long run actual losses should be about equal to expected losses, this new reserve should approach the target level. This change, if it can be accomplished, should improve consistency. You are likely to be hearing more about this later this year and, although less likely, about possible similar changes in the equity component.
- Recalculation of the mortgage loan default factor by an ad hoc committee to reflect both the delinquency and foreclosure rate and the amount of loss, as well as possible other refinements
- New bond factors — adopt the risk based capital factors as AVR maximums
- Wherever possible, adjust factors or definitions to provide consistency with the risk based capital structure
- New real estate and mortgage factors, reflecting the latest Society of Actuaries studies to be released soon, any other emerging data, and the optional use of appraised values in the calculation of the real estate reserve
- Further possible refinements of exemptions for either reserve based on product risks or other considerations. Specifically, the committee has been asked to review the IMR requirements for assets backing various lines of business, such as surplus, term insurance, or variable products.
- Recognition of the new mortgage loan/real estate classifications introduced in the 1993 annual statement
- Recognition in the AVR of lost interest on mortgage loans, as well as the actual writedowns at the time of default. Whether this is done or not, the AVR factors then must be developed to be consistent with the final treatment of these losses.
- Treatment of investments in investment subsidiaries as though they were investments of the parent, treatment of derivatives after the accounting for them is clarified and established, and further IMR refinements for indemnity reinsurance

The advisory committee welcomes your questions, suggestions, and comments as it completes the implementation of these two reserves. A complete list of current items being reviewed is available from the American Council of Life Insurance to its members or from me at my *Directory* address.

James F. Reiskytl, Chair of the Steering Committee of the NAIC Industry Advisory Committee, is Vice-President, Secretary, and Treasurer of the Society of Actuaries. He is vice president, tax and financial planning, at Northwestern Mutual Life Insurance Company.