SOCIETY OF ACTUARIES

Article from:

The Financial Reporter

February 2004 – Issue 56

Asset Adequacy Analysis—Whys and Hows

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Editor's Note: The section's Statutory Issues Serve would be an appropriate forum for discussing the concepts of this article.

With the turning of the leaves in the fall, many valuation actuaries turn their attention to the analysis needed to complete an Actuarial Opinion and Memorandum Regulation (AOMR) opinion and memorandum, including asset adequacy analysis. For the actuaries at some companies, this may be the first year such analysis is being considered. This article will examine the potential need for asset adequacy analysis, as well as some possible approaches to fulfilling the requirements.

The Need

In general, regulation has been moving inexorably in the direction of requiring actuarial opinions to be prepared that consider the adequacy of the assets to support reserves. It is becoming more and more difficult to render an opinion simply based on the formula reserves. Below are some of the forces that are moving companies toward asset adequacy analysis.

AOMR Amendment. Effective in 2001, the National Association of Insurance Commissioners (NAIC) amended the AOMR. Key to this revision is the elimination of an opinion that is based on the formula reserves without consideration of the assets backing the reserves (formerly referred to as a Section 7 opinion under the prior AOMR). Under the revised AOMR provisions, the appointed actuary must consider asset adequacy analysis in forming an opinion. States have been slow to enact the new regulation but have made some regulatory progress in 2003. Already, Florida, Indiana, New Mexico and Virginia have adopted the amended AOMR, effective in 2003. In other states, such as Iowa, the revised AOMR may be effective by the time this article is printed, with many others following in 2004. Companies domiciled in a state that has passed the amended AOMR must submit an opinion based on asset adequacy analysis as of 12/31/03. Companies domiciled in other states, but licensed in states that have passed the amended AOMR, are advised to contact those states to see if an opinion based on asset adequacy analysis is required.

Codification. The Statutory Accounting Practices Group has incorporated certain provisions of the AOMR into codification. Codification requires the disclosure of any material differences between the annual statement reserves and the reserves that would have been developed had asset adequacy analysis been performed. Since codification applies to business written on or after January 1, 2001, asset adequacy analysis may be required to the extent that this business is material. Within the industry, there is still much discussion and confusion as to the impact of the codification requirements.

"Guideline XXX." The Valuation of Life Insurance Policies regulation (Guideline XXX) is in effect in the majority of states. As part of this regulation, companies may utilize X-factors less than 100 percent applied to the valuation mortality table to lower the deficiency reserve burden of their life insurance policies. However, to take advantage of this regulatory feature, companies must prepare an asset adequacy actuarial opinion and memorandum annually in conformance with the requirements of the AOMR.

2001 CSO. One current hot topic is the approval of the 2001 CSO mortality table. Regulatory action is moving at a far more urgent pace on this item than on the AOMR revision. The NAIC model regulation, recognizing the use of the 2001 CSO table, necessitates the preparation of an asset adequacy analysis opinion, if the table is used as the minimum reserve standard for any plan for a company. The model regulation requires the use of the 2001 CSO table beginning January 1, 2009.

Risk Based Capital. Companies may be subject to cash flow testing requirements based on risk-based capital (RBC) C-3 Phase I

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requirements, depending on the outcome of certain exemption tests. If so, cash flows must be modeled using a prescribed set of stochastic scenarios to determine RBC C-3 levels. The American Academy of Actuaries (AAA) recently presented a final report to the NAIC on RBC C-3 Phase II. Possibly effective by the end of 2004, RBC C-3 Phase II will require cash flow analysis of variable products with guarantees in determining the capital requirements. The NAIC is also developing a variant of the capital approach for the determination of variable annuity reserves.

State Insurance Department Requests. Even if an asset adequacy opinion is not required for any of the reasons listed above, under Section 3 of the original AOMR, a state insurance department may request that one be prepared based on the circumstances of any company. Beginning with year-end 2002, the New York State insurance department made this request for category C companies (those with admitted assets between $100 million and $500 million, which, by regulation, only had to prepare asset adequacy opinions every third year, if they met certain exemption eligibility tests). In their request letter, the New York department specifically cited concerns about the continued low interest rate environment, the recent period of high default experience, and the depressed stock market as reasons for the request. Given the universality of these problems for all companies doing business in the United States, other states may follow New York's lead in requesting asset adequacy analysis, possibly on an individual basis.

Possible Approaches

The initial response of many actuaries to the prospect of asset adequacy analysis is that it will require complicated and time-consuming cash flow testing projections. However, this is not necessarily the case. Actuarial Standard of Practice No. 22 – Statements of Opinion Based on Asset Adequacy Analysis by Actuaries for Life or Health Insurers (ASOP #22) – clearly states that asset adequacy analysis encompasses many approaches, in addition to cash flow testing. Section 3.2.2 lists several alternative approaches that would be acceptable methods, in lieu of cash flow testing, depending on the circumstance. Sections 3.2.1 and 3.2.2 of Actuarial Standard of Practice No. 7 – Analysis of Life, Health, or Property/Casualty Insurer Cash Flows (ASOP #7) – also address reasons for and against cash flow testing.

Gross Premium Valuation. One potential technique is the preparation of a gross premium valuation. This involves a projection of the liability premiums, benefits and expenses, and a determination of value based on the present value of the premiums net of benefits and expenses. A liability model is necessary, along with a projection based on that model and reasonable assumptions, but an asset projection is not needed. The appointed actuary may have already developed liability models, or may have access to models that others in the company have developed, that are used for pricing or internal analysis. However, a gross premium valuation would only be appropriate for a non-interest sensitive block of business, such as term insurance, that was backed by assets without embedded options such as calls or prepayments.

Risk Theory Techniques. If the liability considered is short term in nature, risk theory techniques may be sufficient to demonstrate asset adequacy. Risk theory might be appropri-

ate for a short term disability coverage, for instance, that is supported by short term assets. A distribution can be developed using historical claim statistics. Using this distribution, one can calculate probabilities of continuance of the disability claim. Obviously, the parameters of the function associated with this distribution can be varied to develop the sensitivities under moderately adverse deviations. Given the short term nature of the assets, it may be appropriate to ignore the effect of interest.

Loss Ratio Methods. For short term health insurance business (also, like short term disability coverage, supported by short term assets), loss ratio methods might make sense. Aggregate incurred health claims could be estimated by applying estimated loss ratios to earned premiums. Again, various moderately adverse deviation sensitivity tests can be developed to ascertain asset adequacy.

Demonstrate Extreme Conservatism. If the appointed actuary considers the reserves for a particular line of business to be extremely conservative, it would be reasonable to demonstrate this degree of conservatism rather than perform cash flow testing analysis. This might be appropriate with an older block of life insurance business that assumes an extremely conservative interest rate and mortality assumption. For instance, an actuary might consider the valuation interest rate to be extremely conservative, if it were moderately lower than the ultimate reinvestment rate in any falling scenarios that might be considered. One should be very careful to establish that the reserves are calculated using assumptions that are conservative, under any moderately adverse scenario. If the actuary has any doubt about the level of conservatism, it is preferable to use an alternative approach to asset adequacy analysis.

Cash Flow Testing. Although asset adequacy analysis does not necessarily connote cash flow testing, cash flow testing may be the only appropriate methodology for certain lines of business. For instance, for universal life and deferred annuity lines of business, the very nature of the product design renders the lines extremely sensitive to fluctuations in interest rates. Cash flow testing is the only way to analyze the full impact of the interest sensitivity of the asset and liability cash flows. Also, it may be useful for aggregation purposes to cash flow test certain non-interest sensitive lines of business, such as term life insurance. If the appointed actuary desires to aggregate results across lines of business by using surplus in a non-interest sensitive line of business to offset a deficit in an interest sensitive line of business, cash flow testing analysis may be the only method to consistently determine the aggregate value across the lines of business.

Summary. In summary, easier approaches other than cash flow testing may be used, because the nature of the product design and the investment strategy may limit the risks inherent in the product. As such, an appropriate asset adequacy approach would be to demonstrate that the product is not subject to material variation with the respect to the various classes of risk and that the reserves make provision for those variations. The actuary should have a thorough understanding of the risks in the product and the assets, and the interaction between them. He or she should be comfortable with the appropriateness of the approach used for asset adequacy analysis and should be prepared to explain and defend it.

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Overview of Cash Flow Testing Procedure

To the extent that cash flow testing is necessitated by a company's situation, the best place to start is with any existing resources. As indicated above, liability models may already exist within your company to use as a starting point for asset adequacy analysis. The actuary will need to consider whether existing models are robust enough to provide meaningful information in forming an opinion. Be sure to consider both ASOP #7 and ASOP #22 with regard to the appropriate standards of practice governing cash flow testing. In addition, the AAA has many Practice Notes pertaining to cash flow testing on its Web site. These Practice Notes provide practical guidance about various issues related to cash flow testing (note: as many of these practice notes date back to 1995, a Life Practice Note subcommittee is in the process of updating them, with a target date for draft

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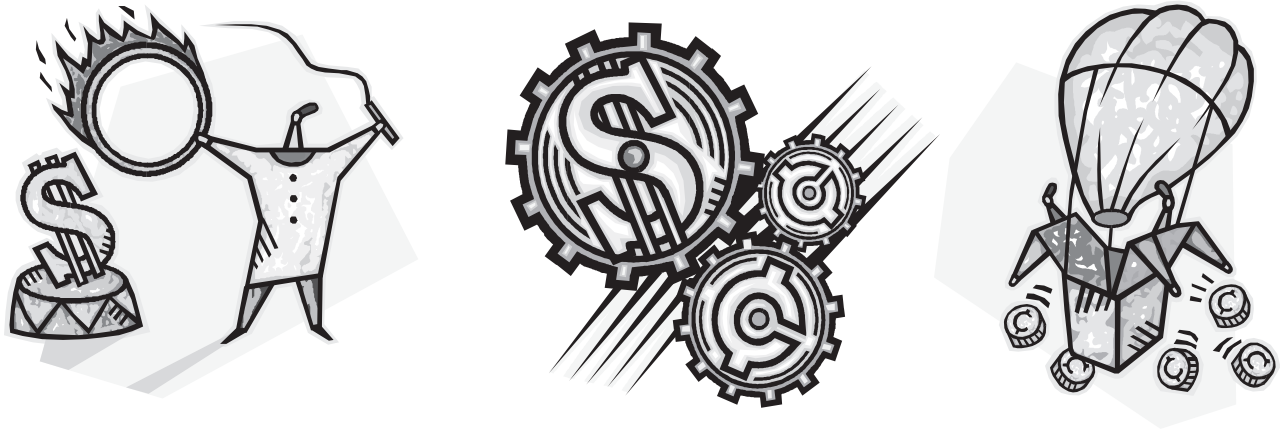

completion in the spring of 2004).

With regard to asset modeling, the first place to start is with any "in-house" models developed by your investment department. If an outside firm provides your investment management, you might have an established relationship upon which to build. Either way, your investment advisor may be able to provide you with a projection of your asset cash flows under the different scenarios. They also may be able to assist with other asset assumptions, such as reinvestment rates, asset default rates and call and prepayment modeling. To the extent your investment advisor is already involved as part of your company committee that sets crediting rates, they may also be able to assist in the liability modeling of the crediting rate strategy.

Lack of time and staffing resources may necessitate the services of a consulting firm. You may need the assistance of a consultant only for the first year or so in developing the models and systems that will be needed on an ongoing basis. Even if you perform cash flow testing yourself, you may want to seek the advice of a consultant to apply insight and guidance based on his or her prior experience to your asset adequacy issues.

While all the work necessary to meet the regulatory requirements may initially seem burdensome, it is possible to draw substantial value out of the process. The models that are developed can be augmented for use by company management. With the addition of new business production, an existing cash flow testing model can be modified into a tool that company management can use to analyze sources of profit and perform sensitivity testing to gauge the effect of various risks. The model could also be further expanded to include GAAP valuation.

What It All Means

Following recent trends, it will only become more likely that some form of asset adequacy analysis will be required. Asset adequacy analysis may create much additional labor for the appointed actuary in preparing the opinion. However, depending on the lines of business involved, cash flow testing is not necessarily the end result. Utilizing available resources, such as existing models or current relationships with investment advisors, can go a long way toward "jump-starting" the process. Even if the appointed actuary does not find that asset adequacy analysis is required for 2003, it is advisable to apply serious thought and time to the issue in anticipation of potential 2004 requirements.

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