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RBC C3 Phase II: Easier Said Than Done

by Patricia Matson and Don Wilson

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Most life insurance companies have faced the challenge of implementing the recently adopted Life Risk-Based Capital Phase II Instructions, which include new requirements for variable annuity contracts. Adopted by the NAIC on October 14, 2005, the new requirements are effective for year-end 2005 and require a stochastic modeling approach (subject to a minimum "standard scenario" requirement) for determining the C3 component of risk-based capital for variable annuities. The approach is complicated, involving multiple steps and certain choices. A background summary of the approach is shown in the shaded box.

In December 2005, when companies were in the midst of implementing the new regulations, Deloitte Consulting LLP performed an industry survey regarding the application of the new rules. The results of that survey were shared with the participants and are outlined in this article.

Background

The new requirements involve determination of a "Total Asset Requirement," or TAR, as the greater of (1) the results of a stochastic projection and (2) the results of applying the "Standard Scenario." The C3 market risk component of RBC is the excess of the TAR over reported statutory reserves (with a floor of 0), after smoothing and transitional rules and a possible tax adjustment.

The stochastic projection is performed using "real world," as opposed to risk neutral, assumptions for generating the economic scenarios. A minimum of 1,000 scenarios are required, and the scenario generator used must meet specific calibration points specified by the American Academy of Actuaries' report. Assumptions are to be based on "prudent best estimates." Limits on reinsurance ceded (such as caps on recoveries and/or floors on premiums) must be recognized. While some companies are using a seriatim approach to modeling, compression of policy data into representative model cells is allowed to minimize run time.

Each stochastic scenario's result is the lowest year-end present value of future projected surplus (for the business in aggregate). The total asset requirement equals the negative of the mean of the results for the 10 percent "worst" scenarios (conditional tail expectation 90, or CTE 90).

In modeling the underlying assets, any existing hedging assets must be included. In addition, if the company has a "clearly defined hedging strategy," credit for the hedge strategy can be taken in the projections. Companies may use an integrated economic model to assess both interest rate and market (equity) risk, but there are also several "shortcut" approaches suggested for modeling interest rate risk, in the event that an integrated stochastic approach is not feasible.

The standard scenario involves a deterministic model with specific assumption requirements as specified in the RBC Instructions. These assumption requirements include specified:

- Separate account returns, which involve an initial shock drop in account values and a modest return thereafter
- Portions of contractual charges
- Lapse and benefit election assumptions that are dependent on the "in-the-moneyness" of the underlying contracts
- Mortality rates

The standard scenario results must be calculated for each policy.

Survey Results

In the course of implementing the requirements, several companies have encountered issues regarding interpretations of the requirements, difficulties modeling certain aspects of the business and concerns with the results. In light of the numerous issues and questions raised, we decided to perform a brief survey regarding some of the most significant issues raised to us and then publish the results in this article. A total of nine companies participated in the survey.

Several of the items addressed in our survey were still being discussed, and therefore the final decision for many companies had not been made at the time this article went to print. Our results reflect the companies' thinking on these topics at the time of the survey, and are subject to change in the final analysis.

We asked the following questions of our survey participants:

1) Do you expect to be impacted by the standard scenario?

2) Are you using smoothing and transition?
3) Are you using a "clearly defined hedging strategy?"

4) Are you planning to have a peer review?

5) Do you expect RBC levels to increase or decrease?

6) Are you using an internally developed system or a packaged software (if packaged, which one)?

7) How are you:
   i) Projecting fixed assets
   ii) Dealing with small legal entities
   iii) Modeling limits on reinsurance ceded
   iv) Splitting the resulting total asset requirement and the RBC between interest rate risk and equity risk.

The results of our survey are summarized in the following charts on pages 11, 12 and 13.

Other Issues

In addition to these specific questions, we asked our survey participants to provide feedback on other issues they are facing. Several companies indicated that timing was an issue—several are struggling to get the work done in time to meet the filing

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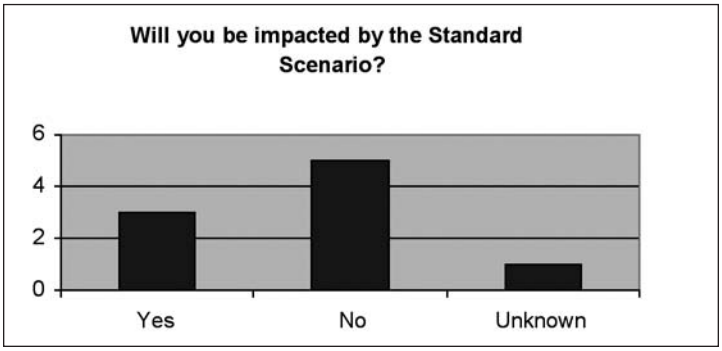
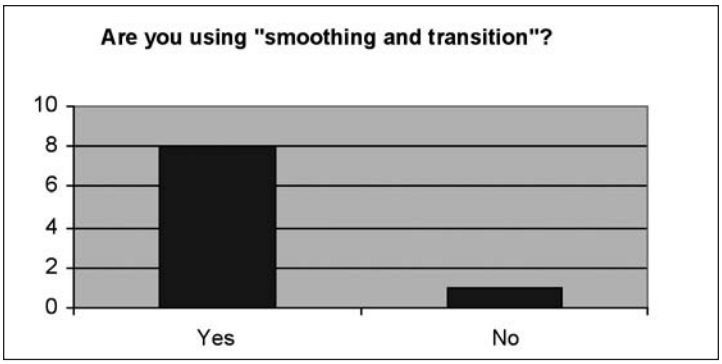
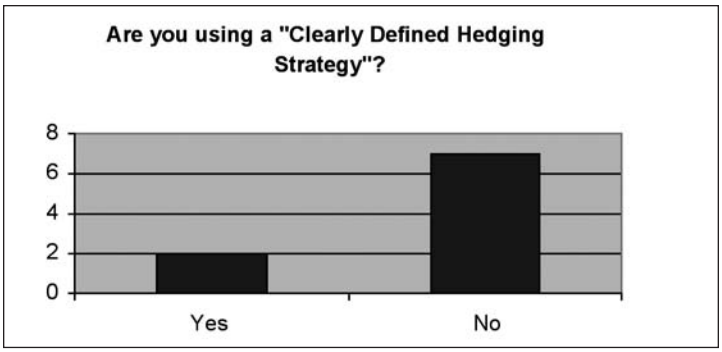


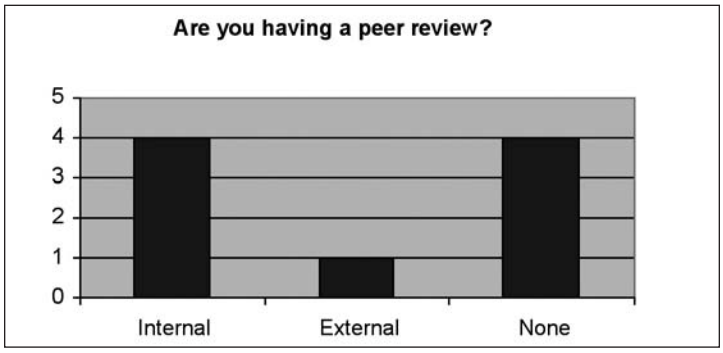
Five of nine companies that responded said that they would not be impacted by the standard scenario. In the event of a significant market decline, the standard scenario would likely have a more significant impact. Only one company of nine has not yet determined the impact of the stochastic versus standard scenario approach.



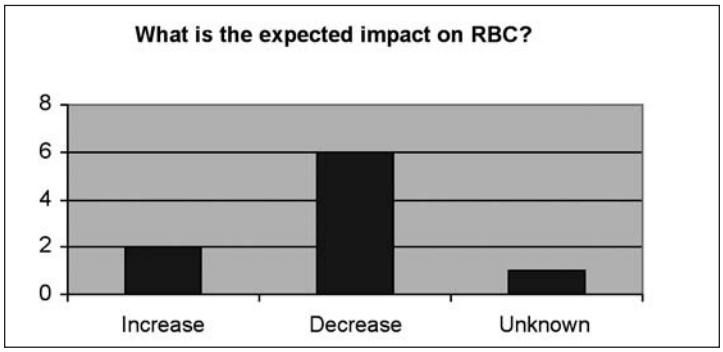
Only one company has decided not to use smoothing and transition, and therefore the full impact of the new requirements will be reflected for year end 2005 for that company.



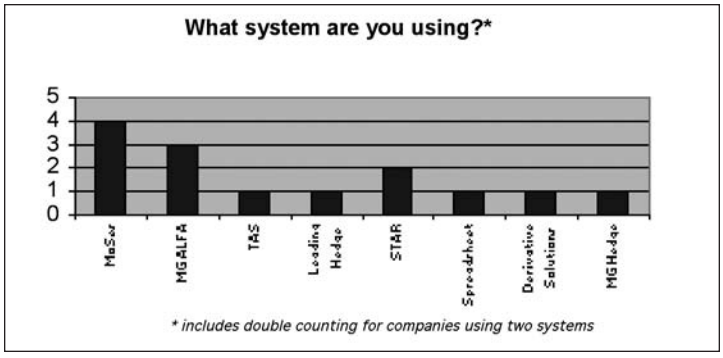
Although few of the participants will be using a clearly defined hedging strategy for purposes of the year-end 2005 calculation, some of our "no" respondents indicated that they are currently hedging and two indicated that they intend to implement such a strategy for future RBC C3 Phase II valuations.



As suggested by the AAA Report, five of the companies in our survey will be having a peer review for year-end 2005. In all but one instance, the peer review will be internal. Of those companies that do not plan to have a peer review at year-end 2005, all but one indicated that they will likely have one performed in the future.



Most respondents indicated that their results were tentative at the time of our survey; however, the majority indicated that RBC levels were likely to decrease as a result of RBC C3 Phase II. Both companies that indicated RBC would increase were also impacted by the standard scenario.

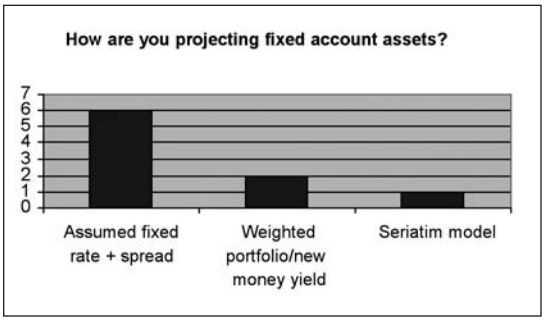


As indicated by our survey, there is wide variation in systems used to perform the calculation, and several companies are using more than one system. In addition, we are aware of some companies that are having a parallel run performed in an alternate system as a mechanism to test their results.

requirements for 2005. The following additional issues were also mentioned:

- Interpretation of the AAA report: There are several areas in which the AAA report is ambiguous, and there are some apparent inconsistencies between the AAA report and the RBC instructions. This may lead to inconsistent results from company to company, and may require some follow-up clarification to reach resolution.
- Incomplete programming of the standard scenario in packaged software: Due to the relatively late adoption of requirements, software vendors have struggled to completely define and test the necessary coding in their packages systems.
- How results should be adjusted for taxes.
- How best to organize results for reporting: Meaningful to management and provide the appropriate detail for regulators.
- How rating agencies will interpret results: In light of the complexity, a significant amount of communication with the rating agency community will be required, particularly if results look different from most of the industry.
- Model run time: This was an issue for several companies, some of whom indicated that an overnight run was required.
- The impact on results of performing a "model point," rather than seriatim, valuation: Some companies expressed concern that a model point approach would understate results, while others found little difference running seriatim versus model point models. This appears to indicate that careful determination of grouping rules is critical.
- Meeting the criteria for a clearly defined hedging strategy:" As per our discussion there, a couple of companies with a hedging program had not incorporated it into their model for year-end 2005.
- Developing appropriate future revenue sharing assumptions after existing contracts expire: Since the requirement for assumptions is "prudent best estimate," it may not be appropriate to assume current levels of revenue sharing will continue in the future.

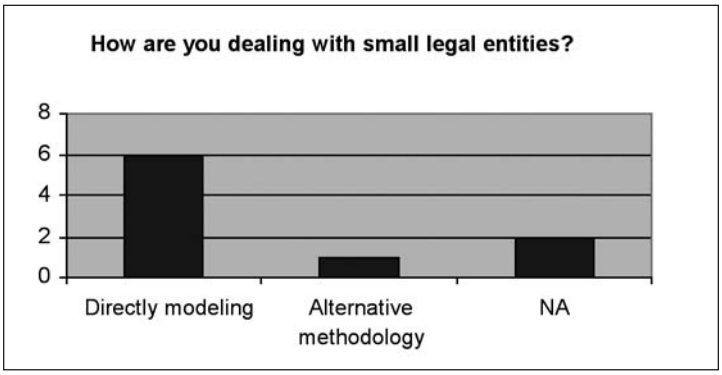
As evidenced by our survey, there are several areas of uncertainty and some wide variations in practice currently. Most of the responses we received were identified as "current state" and subject to change as models are finalized. It will be interesting to see



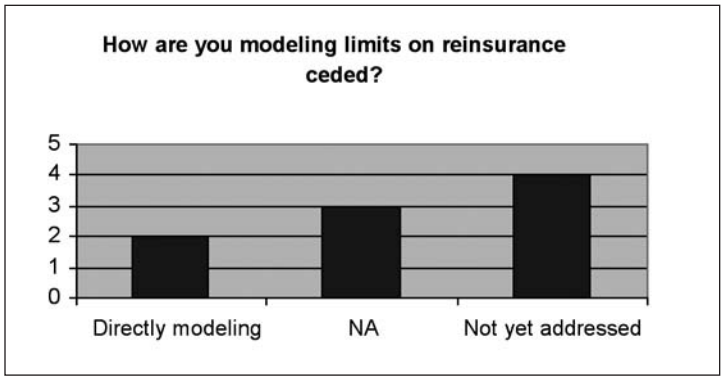
Only one company in our survey has the capability to directly project assets backing fixed accounts in their RBC model. Most companies are assuming a specified earned rate (typically based on Treasury yields) plus some spread. Two companies are projecting their assets in a separate model and using the result to determine a weighted average yieldtaking into account current fixed assets and future investments, and then inputting that result into their liability model.

how practice evolves, and how results are impacted as companies continue to refine their approach.

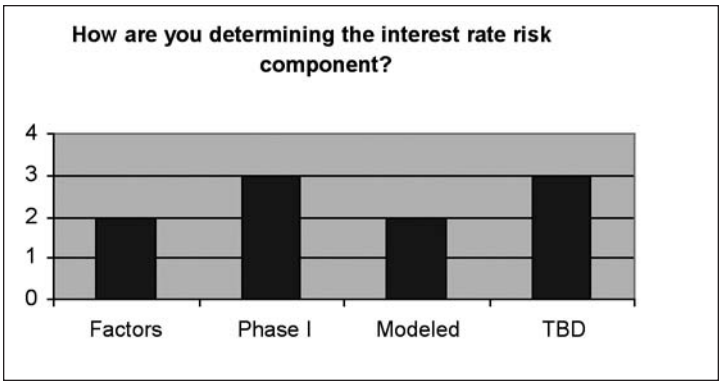
We plan a further, wider survey once results have been filed, to help companies move forward towards December 2006, when it is likely that the VACARVM reserving requirements will also be in place. If you would like to participate in this survey, please contact the authors. $



The majority of companies we surveyed are directly modeling RBC C3 Phase II for all legal entities. One company is using the alternative methodology for a small subsidiary.



Most companies had not yet finalized their methodology for modeling limits on reinsurance ceded at the time of our survey. Due to the complexities of such limits for many treaties, adequately reflecting this in the models can be difficult. For the most part, those surveyed did not believe this would materially impact their overall results.



Most of the companies we surveyed will continue to use either the factor-based approach or the RBC C3 Phase I approach to calculate the interest rate component of RBC (one company indicated they would use one of these two methods, and therefore is counted twice in the chart above), and three companies had not yet decided on a methodology. Only two companies indicated that they would directly model interest rate risk by using an integrated stochastic interest rate generator in the C3 Phase II model.