

**1993 VALUATION ACTUARY  
SYMPOSIUM PROCEEDINGS**

**SESSION 10**

**Problems and Solutions**

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## PROBLEMS AND SOLUTIONS

**MR. ABRAHAM S. GOOTZEIT:** My focus will be on the actual cash-flow-testing assignments that we had in the St. Louis consulting office of Tillinghast as of December 31, 1992; this is cash-flow testing as opposed to other valuation actuary activities. I will be talking about problems and solutions observed by consulting firms. I've segmented my comments into sections. First is general observations, from the assignments that we had as consultants as of year-end 1992. The next topic is reliances, critically important to the work of the actuary. We have a few interesting assignments with companies that are under state supervision, our third topic. The last section, client observations, details the thoughts of our software customers as revealed in a survey. The first section will discuss the general observations from some of the Tillinghast consulting assignments. The information was derived from the 10 or 12 assignments in the St. Louis consulting unit and other assignments from Tillinghast consultants in a few other cities; in total I found information on 23 assignments that I was able to review.

Within Tillinghast we categorize assignments into four types: (1) we are the appointed actuary; (2) we do supporting work that's relied upon specifically by the appointed actuary in his or her opinion; (3) we do supporting work that's not supposed to be relied on; and (4) we do work where we review or assist in some other more limited nature.

The first observation I'd like to make is that the actuaries in the life insurance industry did a good job. This is the first time many companies have done cash-flow testing; we've started appropriately. Most of the actuarial work we do can be characterized as successive iterations, and I think we've made an outstanding start in the first iteration.

Let's continue with positive comments about our liability modeling efforts. Virtually all interest-sensitive business has been included in the cash-flow-testing component of the asset adequacy analysis. That's where most of the C-3 risk is. Many companies have made good efforts to include business that is not interest sensitive; examples are credit insurance and risk reinsurance. There are some companies that complied with the exemption criteria of the Standard Valuation Law; these are small companies, under \$100 million of assets, that met the three requirements

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of being demonstrably less susceptible to risk. A couple of those companies that met the exemption criteria still did Section 8 opinions because of the actuaries' professional responsibility, and I really applaud that effort. Those are positive comments about the liability side of the cash-flow-testing models.

There are still some challenges for us in the future. Some long-term liabilities were excluded from cash-flow testing or any asset adequacy analysis as of year-end 1992, including traditional insurance, and certain types of health insurance like disability income or long-term care. Many companies, because of resource and time limitations, projected liabilities externally in spreadsheets or other facilities on a static basis and then incorporated those static projections into the cash-flow-testing models. Some of those static projects attempted to make the dynamic connection between the asset and liability cash flows, but that effort may not have been complete.

Liability modeling is very important to our actuarial work, but there's no SOA educational material that covers modeling techniques. Some of the liability models we observed and reviewed did not validate (model-to-actual parameters of the balance sheet) particularly well. Companies that modeled traditional liabilities in their cash-flow testing treated policyholder dividends on a static basis; that practice may not be reflective of company activities when interest rates go up or down.

My last comments on liability modeling have to do with reinsurance. Reinsurance assumed is very difficult to incorporate within the cash-flow testing due to inadequate administrative records within the company. Companies treated assumed reinsurance using various methods. One was to ignore it, assuming a positive result from cash-flow testing, and therefore, it was conservative to ignore the business. Some companies went ahead and tried to model assumed reinsurance on a less refined basis; the results invariably came out positive. The question is: do you aggregate the positive results with the rest of the cash-flow-testing models? We observed two companies in this situation: one company did not take credit for the positive results when aggregating the

various models, and another company took the positive numbers into account when aggregating results for the total company.

Another challenge on the reinsurance side is what to do with financial reinsurance and the payback of surplus relief. We would agree that paying back contractually-based surplus relief should be incorporated in the models.

I will now turn my attention to asset modeling observations. On the positive side, debt instruments (primarily bonds) were usually coded appropriately using a seriatim basis. Collateralized mortgage obligations (CMOs) are more difficult to understand. Companies that represent CMOs on a seriatim basis in their models must analyze the underlying prospectuses. There was good use of professional investment databases for CMOs and other assets by many insurers. Stocks, real estate, and other illiquid assets were assigned to surplus when those illiquid assets were relatively small and could be covered by surplus. Some companies utilized a refined asset-segmentation technique where they tried to match the assets to the liabilities and run components of the company in an appropriate manner. A few companies used the cash-flow-testing models as an excuse to do the asset segmentation. These were all very positive steps taken by companies as they modeled the assets.

On the less positive side of asset modeling, there was some poor understanding and coding of CMO assets; that obviously can be corrected and improved in the future. For a couple of companies that allocated part of the company's stock and real estate to the cash-flow-testing models, there was an irrational projection of these assets. The reason may be blind reliance on some of the information (and misinformation) we receive from our investment advisors. Even though we are allowed to rely on the information provided by our investment advisors, it's still our responsibility to review the information and results for reasonableness. There's been too much reliance placed on default parameters that come in commercial modeling software packages that are not meant to be representative for all situations, especially for asset types like commercial mortgages and CMOs.

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Allow me to make other comments on modeling techniques performed by companies we've been able to observe. It's very important to determine the actual process for calculating reserve adequacy. What do we mean by reserve adequacy? It may be different for various companies under various circumstances. Do we review intermediate (year-by-year) values? Do we look at book or market surplus? We need to determine a precise method for determining reserve adequacy and calculating additional reserves.

The interest maintenance reserve (IMR) and asset valuation reserve (AVR) modeling could be improved. The American Academy of Actuaries guidance notes came out a little late last year; the industry will do a better job next year.

There may have been too much reliance on the Standard Valuation Law seven scenarios. "Too much reliance" has two interpretations: one is that it's possible that some of the seven scenarios are unlikely and should not be given equal weight, and two is that the Standard Valuation Law seven scenarios do not include an inverted yield curve and other kinds of stress tests that may be very challenging. The Standard Valuation Law seven scenarios are neither necessary nor sufficient to come up with a good test for reserve adequacy; however, we do use them.

Excess lapses and other dynamic assumptions were not always adequately tested. There wasn't a whole lot of sensitivity testing going on, primarily due to lack of resources and time constraints; that obviously can be improved. We did notice very good sensitivity testing analysis done by several companies.

There are certain parameters that I think are challenging to handle correctly, including federal income tax and the proper handling of tax carryforwards and carrybacks. Future amortization of prior deferred acquisition cost (DAC) tax capitalization can be taken into account in the tax calculation. My observation is that there's been very little recognition of stockholder dividend practice in cash-flow-testing models. It's important to reflect the company's practice of policyholder dividends when interest rates spike up or down in the model. There might be some intercompany relationships concerning why expenses are incurred in a certain way or why

services are provided by one affiliated company for another; these practices may not make a lot of economic sense. We need to search through the derivation of these practices to determine the impact on our cash-flow testing.

The way valuation actuaries are supposed to rely on others is now well-documented. We have guidance from the Standard Valuation Law and guidance notes published by the American Academy of Actuaries. We know what kind of representation letters to write and how to incorporate those reliances into our opinions and memorandums.

Whom do we rely on? We rely on investment advisors, actuarial consultants, and other actuaries. When we use external projections from professional databases, we are relying on the cash-flow and balance-sheet projects from those investment advisors. It is critical to review these projections for reasonableness. Good practice includes determining the methods that are being used and quantifying whether the risk that we're providing for uses assumptions that are best estimate, moderately adverse, etc. The investment databases used by outside investment advisors maintain that their projection methods are proprietary, but that doesn't absolve us from the responsibility of trying to find out more about the methods and techniques and decide whether it's suitable for our purposes.

If the valuation actuary projects the investments in the model, a lot of parameters are received from the investment advisors; we need to review those for reasonableness. There's been a lot of blind reliance, which we need to avoid in the future. Vendor software default values are not designed to be standards in all circumstances. Two of the assignments used for the database in this presentation specifically permitted reliance on our work in the actuarial opinion. There have been times when we've been relied upon without specific permission given to our client companies. The appointed actuary must integrate all the work into a single valuation actuary opinion and be very comfortable that it makes sense and all of the parameters and assumptions are working together.

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Tillinghast was involved with four companies that were placed under state supervision. It was the best education that some of us have ever had. Two companies were already under supervision when we were engaged. The other two were placed under supervision during the course of our assignment. These companies were placed under state supervision for C-1, C-2, C-3, and C-4 risk. There were some risky investments under real estate and commercial mortgages; that's C-1 risk. There were some problems for one company with very esoteric kinds of CMOs, and the prepayment risk was more significant than that company originally thought; that's C-3 risk. There were some product filing questions with one company; that's C-2 risk. And, of course, C-4 risk may be present when a company is placed under state supervision. One company under state supervision hid important aspects of its investment portfolio from its appointed actuary and from us, and another company exaggerated our findings to the media. I would submit that this is not a consulting actuary problem; I think we all face the possibility of being pressured to say things that are against our better professional judgment. I think our position in these circumstances is enhanced by maintaining high professional standards.

The last section in the presentation has to do with client observations, derived mostly from a client software survey that we conducted. We sent out a survey to our 150 software customers. Attached was a two-page addendum that discussed cash-flow testing. One hundred work days were required, on average, to do the cash-flow-testing work. Models included, on average, approximately 500 liability cells and 500 asset cells; some companies included a lot more.

What kind of modeling experience did we have prior to year-end 1992? Most people had some or extensive experience doing modeling prior to year-end 1992; most had more extensive experience on the liability side than the asset side. The next question had to do with availability of information from our in-house systems. We found out that the information was more readily available on the liability side than on the asset side, and again that intuitively clicks with our perception of our professional experience. Even though we're more experienced on the liability side, and the information was more readily available on the liability side, there wasn't that much difference. I think we should stop thinking of ourselves only as liability people and not



investment people because the situation is changing rapidly. We have a lot of experience on both sides of the balance sheet.

We've built these big models; what are we doing with them? Eleven of the 23 consulting assignment companies that form the database for the information in this presentation are using the models for other things; such as embedded-value calculations, financial projections, strategy testing for investments and credit rates, product development, and pricing. Let's now turn to our software clients; we're finding that many of our software customers are using the models for a wide range of things. Sixty software respondents are using the cash-flow-testing models for 111 different kinds of projects.

I'd like to conclude my remarks by saying that the life insurance industry has addressed cash-flow testing in modeling as of year-end 1992 in a manner that is nothing short of remarkable. You can congratulate yourself for coming so far so quickly.



## **PROBLEMS AND SOLUTIONS**

**MR. J. LYNN PEABODY:** A discussion of "problems and solutions" on any subject tends to focus more on problems than solutions. With respect to valuation actuary work, because of its newness, it's easy to continue this trend. Most of us have struggled to address various problems in this area, and it seems more problems surface as solutions are found. However, I expect that trend to change in the future as we turn the corner in our experience development.

### **Sources of Information and Introduction**

My comments in this presentation stem from information I've gathered from several sources. I've discussed valuation actuary assignments with several Milliman & Robertson colleagues, contacted actuaries at companies who served as valuation actuaries or provided direct support, and have discussed with several financial officers their role as experts on whom actuaries relied. In total, the input represents related work in 40-50 insurance companies.

As a result of my research, I'm convinced about the truth of the statement, "The more you know, the more you know you don't know." Based upon our recent experience with valuation actuary work, I recognize that both problems and solutions emerge with experience. However, as we do additional work and gain new insight, I expect the problems to decline relative to the emerging solutions.

In categorizing the results of my discussions, I found that problems (and hence solutions) in valuation actuary work fall into three categories: unfamiliarity, timing, and uncertainty. In my opinion, if we were to ask the same people after their year-end 1993 valuation work to describe their primary problem areas, the same three major categories would result. The only difference would be that "unfamiliarity" would be less of an issue, but it would still be there.

### **Unfamiliarity**

Problems of lack of familiarity can be related to general procedures, with regulatory and professional requirements, and with software. Procedural problems existed because most companies had not been through the entire valuation process prior to last year-end. Even with

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advance notice, most companies weren't able to gear up for this process as much as they would have liked.

Unfamiliarity with the requirements of the job was widespread. Actuarial standards had been exposed but not finalized. States seemed to be blazing their own trails, and several onerous last minute requirements were being established.

Finally, unfamiliarity with software was a common problem. The software being used for valuation actuary work is very sophisticated, and has a steep learning curve. Many people weren't familiar with the output from the systems, what results really mean, and how much time various tests required. Additionally, consolidating results of various lines of business, which may have been developed on different systems, was very difficult.

There are many opportunities (not really solutions) for improving the familiarization problem. The main thing is experience. That's a guaranteed winner. Another important item is the finalization of the actuarial standards of practice. These will need regular review and updating to maintain their relevance. Networking is another opportunity to enhance actuaries' familiarity with the process. Having other persons' experience or expertise on which to draw can be very comforting. Finally, the practice notes being developed will be very useful. They can provide a solid practical guide, especially if they receive the endorsement or recognition of the actuarial governing bodies.

### **Timing**

Without a doubt, timing concerns were a major issue with valuation actuaries. They were often caught between the professional need to do everything necessary and do it "right," and the practical issue of getting the job done on time. A basic concern was fitting the work into everything else normally required at year-end. There was no extra time allotted by regulations, and in many cases no extra people were available.

Another timing concern was sacrificing quality for deadlines. Fewer sensitivity tests or alternative scenarios were done than desired. Also, multiline companies found the gathering and consolidation of information and results a major time factor. To alleviate timing concerns, much testing was done using nonyear-end data. The appropriateness of this was questioned by at least one state. I believe if year-end data are required, then deadlines must be extended as well.

Solutions exist for addressing these timing problems. It will help if companies define specific needs in terms of their year-end work. Creating a checklist of requirements may help to focus the work. Also, developing confidence in preyear-end results, through actual/expected analysis, will allow more prompt acceptance of results. Standardizing internal procedures will also be valuable by helping to avoid some of the helter-skelter feeling, and by documenting just what you can and cannot do.

Regulators also can play a role in solving timing problems, without changing filing deadlines. They can define potential problem areas and items where they have specific interest, thereby allowing companies to focus their work on the most important issues. Then, if timing extensions are needed to address these specific issues, the extensions will be valuable to the regulators as well as those doing the work.

### **Regulatory Uncertainty**

Uncertainty with respect to regulatory issues impacted both regulators and the regulated last year-end. Because regulators in different states seem to have different "hot buttons" in this area, it's important that they tell us what is really of major importance to them, and why. This will allow us to focus our work and responses. Another problem area deals with the minor lines; those items where much more time is spent than value derived. This includes such items as A&H, reinsurance, or noninterest-sensitive business.

Another regulatory uncertainty deals with the requirement to meet all states' regulations. What does this really mean? Is it feasible? A task force has been established to deal with this issue.

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Finally, there is regulatory need to match reality with practicality. It is important to bring these together in the future if we are to derive maximum benefits from this work.

Solutions to regulatory uncertainty include communication, flexibility, education, and experience. Our communication with regulators is good, but can be better. We can't wait until the last minute each year to define new requirements. Flexibility is needed to apply this theory to the practical world. Valuation actuary work is not a black and white science. Finally, as our education and experience in this area grows, for regulators and practitioners, the level of understanding will grow and uncertainty will diminish.

### **Procedural Uncertainty**

Procedural uncertainty refers to those areas with which the practitioner specifically deals. The people I talked with continued to raise issues related to the number of scenarios needed to pass. This issue has been discussed since the first symposium. The underlying issue is "how much is enough." This is a professional question, and goes to the heart of the actuary's desire to "do it right." Handling minor or interest-insensitive lines creates procedural uncertainty. The actuarial standards of practice have been unclear about specific handling. Financial reinsurance is one such area. The practical issues regarding the movement of information back and forth is still to be solved. A final procedural uncertainty relates to the credibility of results. What do the results actually mean? Are they appropriate for the situation? These are both general and specific concerns.

There are no black and white solutions to these procedural issues. Networking will be helpful. There is comfort in knowing how others address similar problems. It's also important to define your own success parameters, in advance. Then, when leeway in results is expected, the actuary can take more comfort in having met the requirements.

To help in the credibility of results, it will be useful to perform and document the validation of your results. Tracing numbers from published data to your testing will be helpful. Finally, we

should encourage the development of more education materials from which to draw as we address some of these practical issues.

### **Asset Uncertainty**

Uncertainty regarding assets resulted primarily from our lack of education and experience in this area. The defined problems will change as experience increases. The allocation of assets to reserves and capital/surplus created uncertainty. As we move toward a market valuation of assets, the problems will continue. Another asset concern is the reliance on others. This is especially true since the connection between asset "experts" and actuaries is still forming, and there is a lack of understanding on both sides.

There is also concern regarding the development of certain asset related assumptions, such as prepayments, calls, defaults, and so on. No solid base of data yet exists in these areas. A final asset-related concern deals with the utilization of outside resources. This is the "black box syndrome," where we would like to have access to all information, but can't. Modeling and projecting CMOs is one example, where outside resources provide most of the current information.

Solutions to this asset uncertainty primarily rests with developing expertise and understanding, and building up databases of information. Companies can perform actual/expected tests to validate their assumptions. This is also useful to provide feedback to the outside resources providing us with data. Communication with those on whom we rely can be substantially improved. Working on opening those lines will minimize the uncertainty in both directions.

### **Actuarial Memorandum Uncertainty**

Doubts certainly exist in several areas regarding the actuarial memorandum. Among those consistently expressed is the real purpose of the memorandum. Is it developed for management, regulators, in-house documentation, or all of these? Each has different interests and needs. A practical issue is that of "is too much better." Should the actuarial memorandum be relatively simple and straightforward, or should it contain all the "nitty-gritty" to support the opinion.

Practitioners have identified the conflicts of satisfying the primary audiences (management and regulators) since both have different needs. Utilizing executive summaries has been useful in many cases.

Solutions to these actuarial memorandum concerns will be found over time. It will help to follow professional guidelines, and recognize practical limitations when dealing with different audiences. Keep things in perspective. Networking and peer review have proved useful. Find out what others are doing, and ask specific questions relative to your own situation. Finally, don't be content to merely copy last year's report. Doing so will meet the deadlines, but will do little to relieve the uncertainty associated with this task.

### **Cost/Benefit Considerations**

A final concern related to valuation actuary work deals with the benefits being derived for the time and energy expended. Are we getting our money's worth, and how do we make the work more useful? To gain value from the process, we need to make goals and measure success against these. It will also help to find side benefits, which provide visible evidence of the worth of the work. This may be documented in future literature.

It is important for us to do what is reasonably necessary to make the valuation actuary work a useful process. We can make or break the process by how we approach it and learn from it. Most of the concerns expressed in this session will not go away entirely over time, but they can certainly be lessened. It will be interesting to attend a session similar to this in 1994, to see how far we've progressed.



**PROBLEMS AND SOLUTIONS**  
**PROBLEMS AND SOLUTIONS: A COMPANY ACTUARY'S VIEW**

**MR. CRAIG R. RAYMOND:** The following is an overview of how we approached cash-flow testing for the individual lines at The Hartford. It will touch on the major issues that came out of this work, and discuss the most significant concerns that arose.

Basic Rules -- There are two basic rules to keep in mind in planning for the effort required in the valuation actuary's opinion:

1. It will always take longer than you think.
2. You can always do it better.

The first and possibly most significant problem is: "How do I get this done with my small financial staff, while we are trying to pin down next year's budget, and senior management is constantly pressuring to know what full-year results will be?"

Resolving this problem requires planning ahead and leaving plenty of time for review, refinement, and possibly corrective action.

Compounding this problem, we realized virtually all of the modeling expertise on the staff was on the product development side. The coordination of the cash-flow work between the financial and product staffs proved to be a challenge. To respond to this, we have created a consolidated modeling position within the financial area. This actuary's responsibility is to develop and maintain modeling capability for all uses: cash-flow testing, business planning, macropricing, and other management information.

Blocks of Business -- Hartford's individual business falls into four major blocks of business:

1. Modified guaranteed annuities
2. Variable annuities
3. Universal life
4. Traditional life

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Modified guaranteed annuities need special attention. The NAIC model and New York Regulation 127 require an opinion on this block alone. Excesses in other lines cannot be considered in this opinion.

Variable annuities are often ignored in cash-flow testing under the assumption that there is no investment risk. This may be a false assumption. If reserves are less than account value, some risk will exist. Additionally, if a right to transfer to a general account fixed bucket exists, the risk of maintaining the minimum guarantee in that account must be considered. On the positive side, this block provides a stable predictable stream of cash flow that may be used in providing for an opinion on aggregate cash-flow testing.

For the traditional life block, our cash-flow testing was limited. Like most companies, our traditional block is fairly old. Having made it through the replacement binge of the last fifteen years, the liability cash flows are virtually insensitive to lapse. So, we look at a single, low-interest scenario as representative of the worst case. Additional scenarios may be tested in order to provide for surpluses for use in offsetting shortfalls elsewhere. This may prove helpful in rising interest scenarios.

General Approach -- Start conservative and simple. Determine your success criteria. Otherwise, you will need a big budget to pay for all the consultants.

Refine the model as necessary to provide for the opinion. Look at each line of business separately. Then, if necessary, combine lines to provide for your opinion. Variable annuities and traditional line surpluses can be useful in this consolidation.

As an example, we have been testing our annuity business for a number of years, and each year our models have become more complicated to eliminate overly conservative simplifying assumptions. These refinements have included assuming renewals and modeling an active reinvestment strategy.

Never forget this is only a model. As our models get more sophisticated, it becomes harder to tie the assumptions made to their impact on results. Never forget these are only assumptions; your model is not reality. Carefully review your results to make sure they make sense. If they do not, look at your assumptions to make sure they make sense. Also, remember there are assumptions and default values inherent in the modeling systems that should not be overlooked when evaluating the appropriateness of results.

Remember, there are a significant number of items that you have not modeled. You have assumed that these items do not significantly impact your results. Above all, do not forget to reconsider this assumption when you review your results. Your model is an informational tool, not an excuse to avoid thinking.

Issues -- The major issues we saw in our testing work are as follows:

1. Timing. We used September 30 data as many companies did. This is reasonable as long as any significant changes before year-end are recognized in the opinion.
2. Ability to effectively model all assets, particularly mortgage-backed securities. I have heard from many that the modeling of numerous assets is severely lacking. This makes the effective modeling of a wide range of scenarios extremely impractical.
3. Coordination of asset/liability models. A single model would have been wonderful, but we have not been able to reach this point internally. Our investment staff does not feel that there is any existing model capable of doing both effectively. We have created a spreadsheet bridge to tie the asset and liability models together on the annuity business. Expanding this to the life business is a challenge.
4. Expense assumptions were based on an ongoing operation. Sales and growth assumptions should be reviewed for reasonableness before projecting unit cost reductions.
5. Negative cash flows. We made conservative assumptions as to the cost of negative cash flow to simplify the modeling of disinvested strategy.
6. Year-by-year statutory versus cumulative cash-flow testing. A much more sophisticated model is necessary to project statutory results. We projected cash flows only. This will become an issue as many regulators are raising this question.

7. Stochastic versus deterministic. I do not believe stochastic testing is necessary. Deterministic can be utilized effectively in order to develop a set of results that help to understand the risks in the block. Stochastic may be an effective tool in identifying these risks, but I think a targeted set of deterministic scenarios can be sufficient.

Here is an example of the danger of stochastic testing. I was discussing single premium deferred annuity cash-flow analysis with an actuary from another company recently. I mentioned that I was concerned with the significant risk of the minimum guarantees. They had run in excess of a thousand scenarios and their testing showed this not to be a big issue. As we talked through this, it became clear that despite all the scenarios, the stochastic generator was biased to assume rising interest rates, so an adequate analysis of this risk of declining rates had been overlooked. There was a hidden bias in the system that had been overlooked. Again, remember it is a model.

8. "All states" requirement. We spent a great deal of time reviewing reserve requirements to verify that any shortfalls by state could be offset by excess reserves elsewhere.

Primary Concerns -- Overall, there are two areas of primary concern that I see in cash-flow testing in today's environment:

1. The cost of the minimum interest guarantees in most products can be excessive in down scenarios. This is particularly true when current new-money investments barely support those minimum guarantees. This risk can be controlled by purchasing hedges; however, this cost is often unreasonably excessive. This can be a worthwhile process to go through anyway to educate yourself and your management on the cost of these guarantees. For new business, the risk can be limited by reducing the minimums.
2. Probably the most sensitive assumptions that are included in the model are relative to policyholder and company behavior. What will the policyholders do, and how will the company react? These assumptions are often duped into the model early on and then never reevaluated. We have developed a good deal of information on policyholder behavior in declining scenarios; however, how they will react in this low rate environment or a rising scenario is still unknown.

Even in stochastic modeling, you should pull a few scenarios at the extremes of good and bad and look at them. Does this model reflect reasonable policyholder and company behavior? Often you will find refinements in the behavior assumptions will more accurately model expectations and eliminate many problem scenarios.

In closing, I will remind you that these are my opinions. I will tell you the same thing that I tell the people on my staff who are responsible for this work. Talk to others, get their opinion and advice, but your professional opinion is what matters. In the end, if it is your signature on the paper, it has to make sense to you.

