

**1998 VALUATION ACTUARY  
SYMPOSIUM PROCEEDINGS**

**SESSION 4PD**

**PRACTICAL AND THEORETICAL CONSIDERATIONS IN STRENGTHENING  
RESERVES BASED ON CASH-FLOW TESTING**

**Gerald A. Lockwood, Moderator**

**Karen K. Rudolph**

**Stephen A.J. Sedlak**

**Stephen A. Zonca**

**Stephen M. Finley, Recorder**



**PRACTICAL AND THEORETICAL CONSIDERATIONS IN STRENGTHENING  
RESERVES BASED ON CASH-FLOW TESTING**

**MR. GERALD A. LOCKWOOD:** I'm currently senior vice-president and corporate actuary at the Union Central Life Insurance Company in Cincinnati, Ohio. I'm also the appointed actuary for Union Central. There will be a presentation from each of our three panelists, followed by a question-and-answer period. Each of the panelists will be addressing this topic from a different perspective.

Steve Sedlak is the first speaker. Steve joined Nationwide Financial Services as an actuarial student in 1969. During his career at Nationwide he held a variety of positions including head of the individual life actuarial area. Steve is currently vice-president and corporate actuary at Nationwide. He serves as the appointed actuary for the enterprise's life insurance companies, and, as a result, he has responsibilities for both large and small life insurance companies. I think you will find that the theoretical and practical considerations he addresses apply to companies of all sizes. His presentation provides a good foundation for all of us and for this topic in general.

Our second speaker is Karen Rudolph. Karen is a consultant in the Omaha office of Milliman & Robertson. She has been with the firm since 1981. Her area of expertise is individual life insurance. She is active in life insurance product design and financial reporting, including business modeling, financial projections, and valuation issues. Karen works for several small companies on appointed actuary issues. Her presentation will address the topic from the small company perspective.

Our third speaker today is Steve Zonca. Steve has 22 years of experience involving a wide variety of life, annuity, and health products. His experience involves pricing, product development, valuation, and financial reporting. He has been the valuation actuary for two different life insurance companies. Steve currently is the vice-president and chief actuary for RGA/Swiss Financial Group, a specialist in capital-oriented reinsurance. Steve's presentation will provide us with some practical solutions to reserve-strengthening issues using reinsurance.

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**MR. STEPHEN A.J. SEDLAK:** I had given a similar presentation on this topic last year. Some of this will be the same, but hopefully there is a lot of new information as well. I am going to give you my definition of reserve adequacy and discuss whether new business should be included or not. Also, I'll discuss how you actually compute the values you use to make your reserve adequacy decisions. I will address what I call time issues, which involve the timing of when you measure your surplus. I will also talk about what you should include in your testing, and what reserve adequacy is and means in practice.

The definition of reserve adequacy is that the future results from business will not consume any surplus over the long haul. What is really important is that you don't consume surplus, which implies that your reserves (plus associated assets) are enough to support the business by themselves. Also over the long haul you can borrow just as long as you don't permanently expend the surplus. That is somewhat of an area of discussion in the industry.

Our next issue is to address the concept that adequacy relates only to existing business. In other words, new business is not really included. However, there is a caveat, and that is that the lack of future issues and future new business can influence future assumptions such as expenses. You implicitly find yourself making the assumption that you're going to be able to maintain your expenses at current levels or, alternatively, that your expenses are going to be moving in some manner absent the new business. That really is dependent on what your company situation is. So, if you are literally going out of major lines of business for some reason, it is probably going to be unreasonable to assume business as usual.

The concern is statutory reserves when establishing the basis of values to use in your testing. GAAP doesn't match statutory reserves. GAAP is important in its own way, but for this particular purpose, statutory is really driving things. You are doing an opinion on the adequacy of statutory reserves. That doesn't mean that some of the testing and some of the things that are going on and driving your conclusions as to reserve adequacy will not influence your GAAP results. That's sort of an ancillary issue. Market value measures talk about fair value on market value. However, they may not really guarantee statutory adequacy. Because market value measures are not fully related to it, the answer

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is that you need to use statutory measures. Maybe that is completely obvious, but it is something that really needs to be thought about and something that probably will never go away as an issue of debate and controversy.

Now I'll discuss some of the more nitty-gritty things that I call time issues. What about interim values? At what points do you make your measurements and your testing horizon? First, I'll address interim values. Under my definition, interim values are not included. In other words, you're taking this long-term approach. Can you get your policies to the other side of your projection horizon and not permanently consume surplus? That is somewhat of a controversial definition. At any rate, this approach assumes that any interim-needed surplus is available. That is kind of an interesting assumption if you think about it.

It is less conservative, of course, than saying you cannot incur or make an incursion on surplus at any point during the projection horizon. Philosophically, we're going to mature the policies, but that doesn't mean we're always going to have no-surplus incursion. This definition also avoids what I will call "early duration loss" or "new business flow-through." For example, let's say you're at a life company writing pure life insurance with high commission scales. Often the first year of projections, especially if you're rapidly growing, may give negative values. This is because all your first-year commission flows from that new business still occur in the first projection year, and that can actually result in negative results. You could change this definition and go to interim values. However, that is going to remove some management discretion or it's going to put additional burden on the cash-flow testing and reserve-adequacy evaluation process.

I want to discuss point of measurement. You'll often see accumulated surplus used in testing and making judgments as to whether or not the reserve are adequate. However, in this case there would be a few questions that you would have to deal with. For example, what does the negative value at year 20 mean in terms of strengthening reserves today? You would still have to answer that question if you did ever have negatively accumulated values to any great degree. Another question is, if one has differing projection horizons, how does one equate these values to be able to aggregate? I think the better answer is to simply use present values right up front. These values should be scenario-

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dependent and computed so they really reflect what your surplus effect would be over the projection horizon. What you're interested in is what extra reserve would be needed today.

A good rule-of-thumb regarding the horizon is to make sure your horizon is long enough so that the business left is immaterial. There are all sorts of ways to judge if the horizon is long enough. Counting is kind of misleading, and the face amount could be very relevant for life insurance. Usually a percentage of the original value would be far superior. Another thing to think about is if your projections are producing negative gains at the end of the horizon. In this case, you will want to look at years beyond the horizon and see if you've got more of a problem than your projection horizon revealed.

What do you want to use in your cash-flow testing? I think you can ignore immaterial items as long as there aren't so many that they eventually gang up on you and become material. Anything which contributes to future results should be included as a general rule: non-sales overhead costs; material optionalities in either the products or in the assets.

Last, but not least, you really should include separate account business. Why? First, you've got spread compression risk. By that I mean that if the market value goes down, the risk fees you charge on separate account business will go down in lock-step with the market value of your separate account. However, your expenses are not likely to do the same thing unless you've got some truly unusual expenses or you've got an outside administrative agreement with somebody that is phrased in terms of percentage of assets. By and large you'll see compressed spreads. If they're positive, that's fine. If you have certain products, especially those which are sold at low initial commissions, such as trail products, you could actually find that you run out of spread and get negative gains from operation.

Second, there are minimum death benefits on many of these products. Some of these minimum death benefits can be quite expensive. If the market goes down, they can be very expensive.

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Third is transfer risk. You've got huge piles of money that can slop from one side of your company, the separate account, to the other side, the general account. This depends on the transfer restrictions in your contracts, how they're actually being administered, and policyholder psychology, among other things.

Finally, you've got a diversification aspect. This is good. Separate accounts in some ways tend to support or buoy-up results from other business. As a result, you might get a positive answer where otherwise you had a potential reserve-strengthening problem.

One of the things you need is to model separate account business, a reliable economic scenario, and a generator that will project market values or market performance reasonably. This should be compatible with the way in which your interest scenarios are generated.

Here are things you should have in your projections. You should have reasonable assumptions based on reasonable or current operations for your company. Also, if you have some trends in values that look likely to happen after the valuation date, then you should reflect them as well. You shouldn't be reflecting desires, for example, an option program your company's been talking about that you think is going to really work and do many good things. If no one has approved it yet, it's probably not conservative to include it. In this regard, you should ask: are these actions within current capabilities? Can you actually execute them? If you can't really execute or if you don't know whether you can or not, you probably shouldn't include this in the assumptions used in your cash-flow testing; at the very least, an action or plan should be in place or adopted or agreed to at a high level.

I'll give an example. Your company has a proposed hedging program. Generally, I don't think you should be able to include that in your cash-flow testing. Why not? There's a lot of things involved in hedging programs. Unless you have a very good feeling that the hedging program is going to be put in place, and you know what it truly involves from an expense standpoint and are able to model it, you probably shouldn't have it in your cash-flow testing. On the other hand, an in-place hedging strategy is generally useable unless you don't have the faintest idea what it involves.

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What's adequate? What does adequacy mean for reserves? Are the New York 7 scenarios enough? If some of the seven are negative, what do you do?

Chart 1 shows cash-flow testing results from an actual block of business written by a large, well-regarded Midwest insurance company. This example shows only New York 7 results. It's fairly clear that this block of business is somewhat adversely affected by upward movements in rates. Downward movements in rates adversely affect it only slightly. What you're really looking at is the optionality of your products manifesting itself in one way or another—either the floor guarantee that you're making or the withdrawal at book.

When you sort your results from worst to best (Chart 2) you see a ranked distribution manifest itself. This might lead you to say, "I have a very good picture of my results distribution. If zero is at the bottom of the chart, all my results are positive and I'm in great shape; if zero is at the top, I'm definitely hurting. If zero is in the middle, clearly I have to do something more." However, is this really the distribution results? Of course not.

This can be seen in Chart 3. This is based on the results of 200 scenarios with the results of the New York 7 superimposed. It shows that for this business, the New York 7 produce a clump of relatively poor results and another clump of relatively good ones. However, they are too sparse to really provide a very good picture of the underlying distribution.

It is worth mentioning that the distribution shown here is based on a stack of underlying assumptions. We always need to bear in mind that the results of actuarial projections are the result of an assumption-driven process. As such, it is only as "real" as the assumptions upon which it is based.



CHART 1  
NY 7  
Block of Business 1

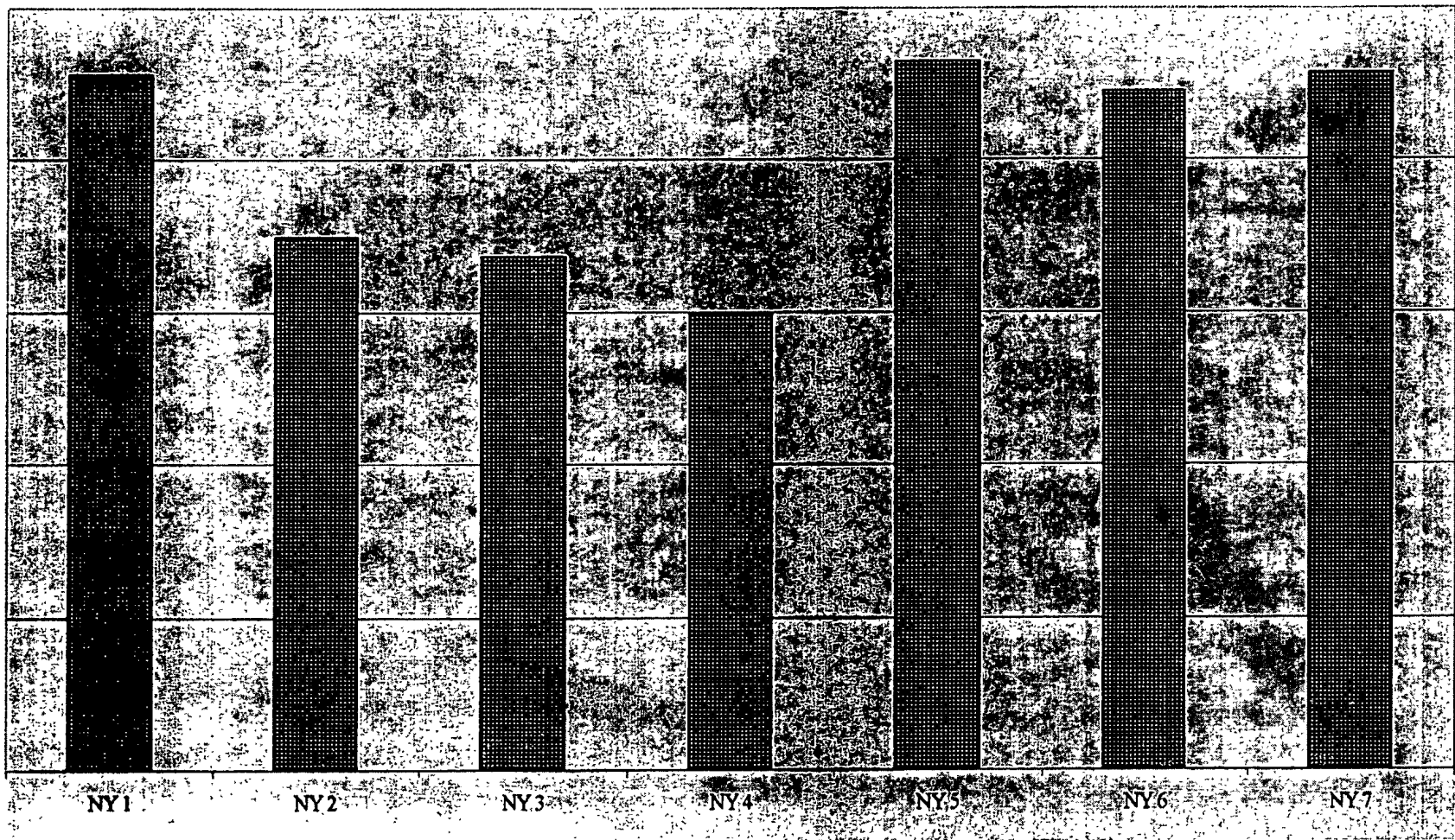
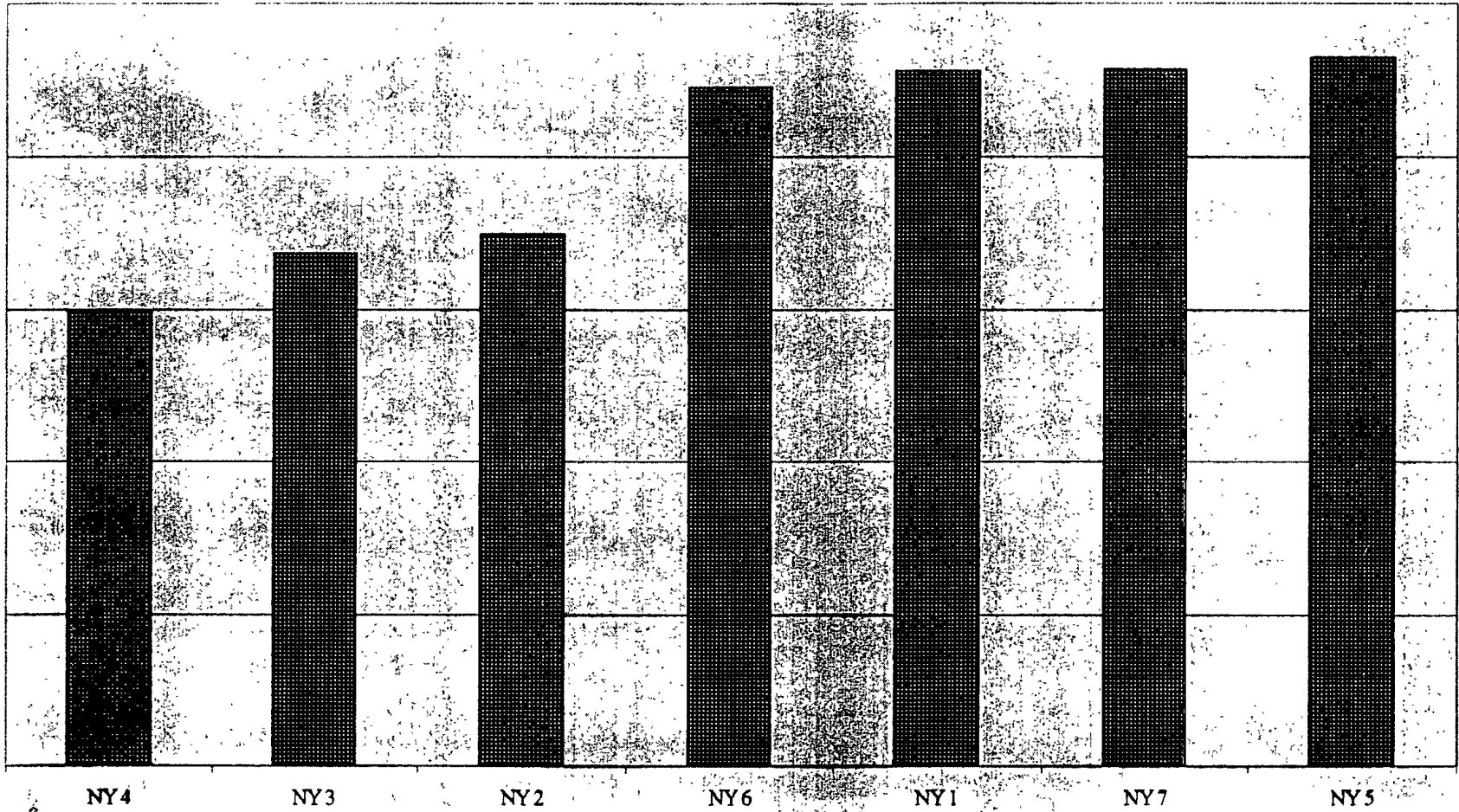
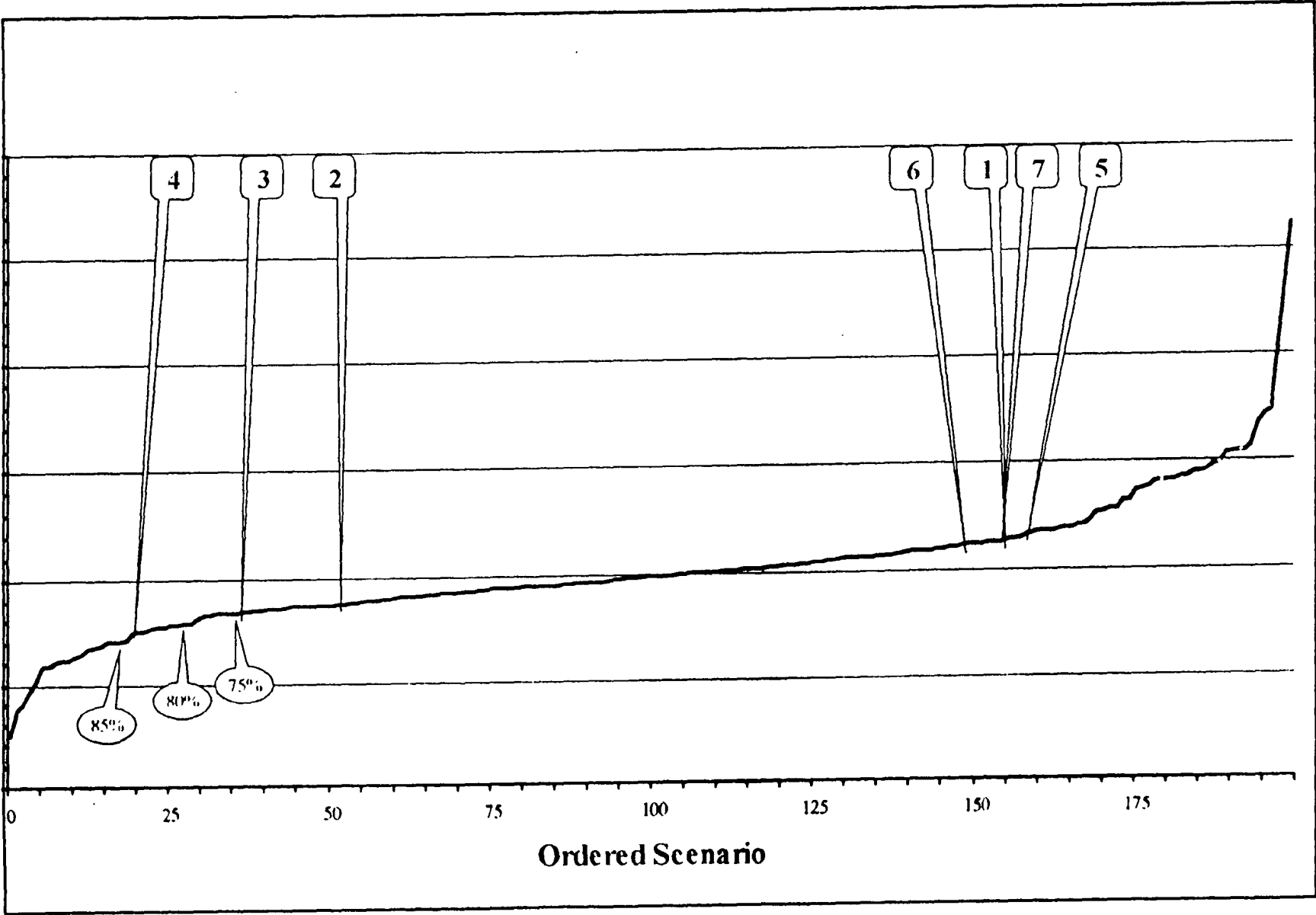


CHART 2  
Sorted NY 7  
Block of Business 1



**CHART 3**  
**Comparison of NY 7 to Random 200**  
**Block of Business 1**



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An example of another block of business is shown in Chart 4. In this particular case you have a lot of potential upside that you're not even capturing with your New York 7. This could come about for a variety of reasons. One of them is the fact that if you're modeling deterministic New York scenarios, they don't say anything about separate account performance. If you have a separate account product, and you actually try and model that, the market might just go up, and good things will happen to you. On the other hand, the reverse is also true of the bear market.

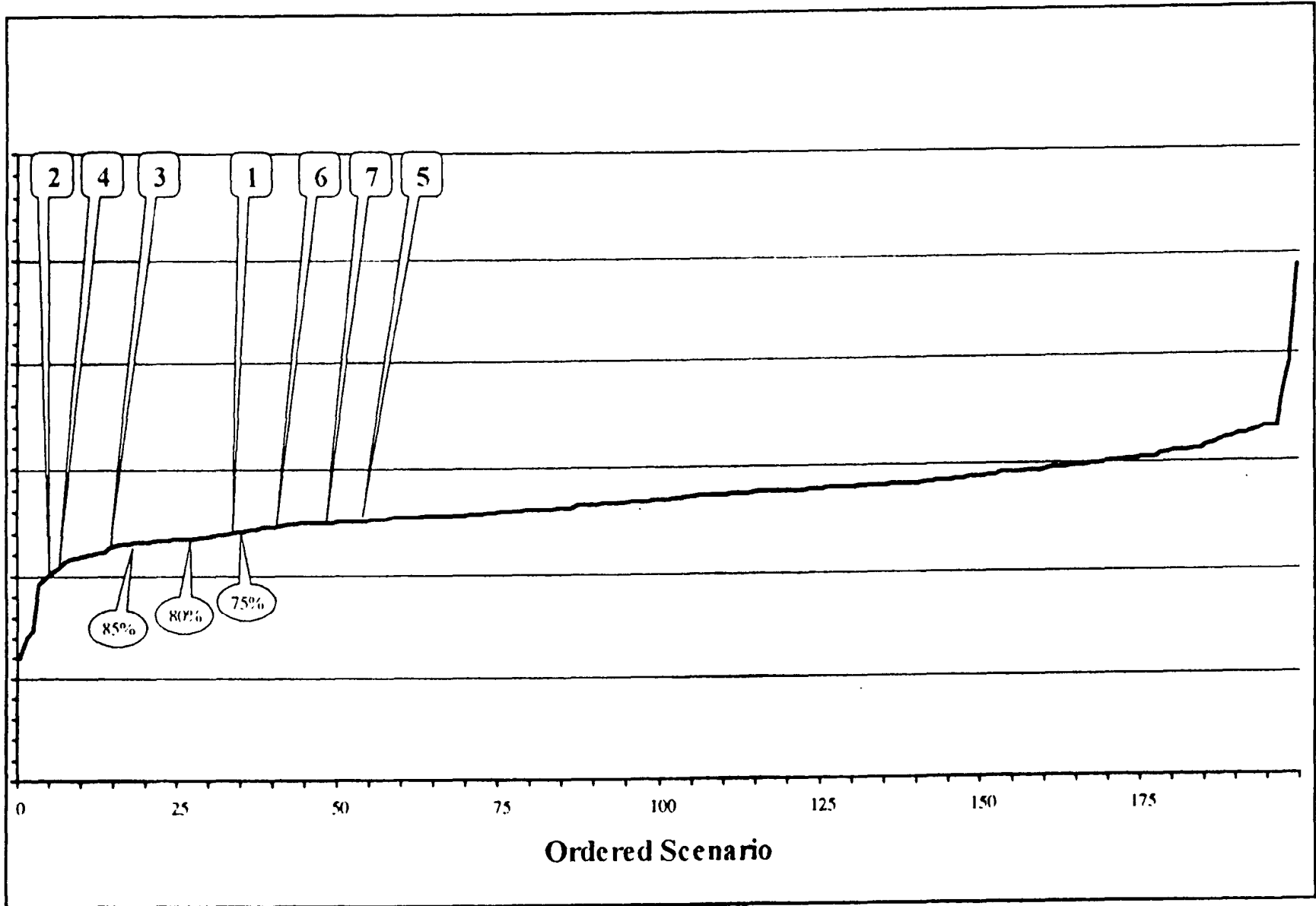
The final example is shown in Chart 5. For this business, the New York 7 produce results which are clumped at about the average and at the extreme favorable tail of the distribution.

What does all this show? First, the New York 7 results tend to cluster to the extent that your up and down scenarios under New York 7 tend to segregate themselves out. Also, you might find that those are too pessimistic or you might find that they're too optimistic.

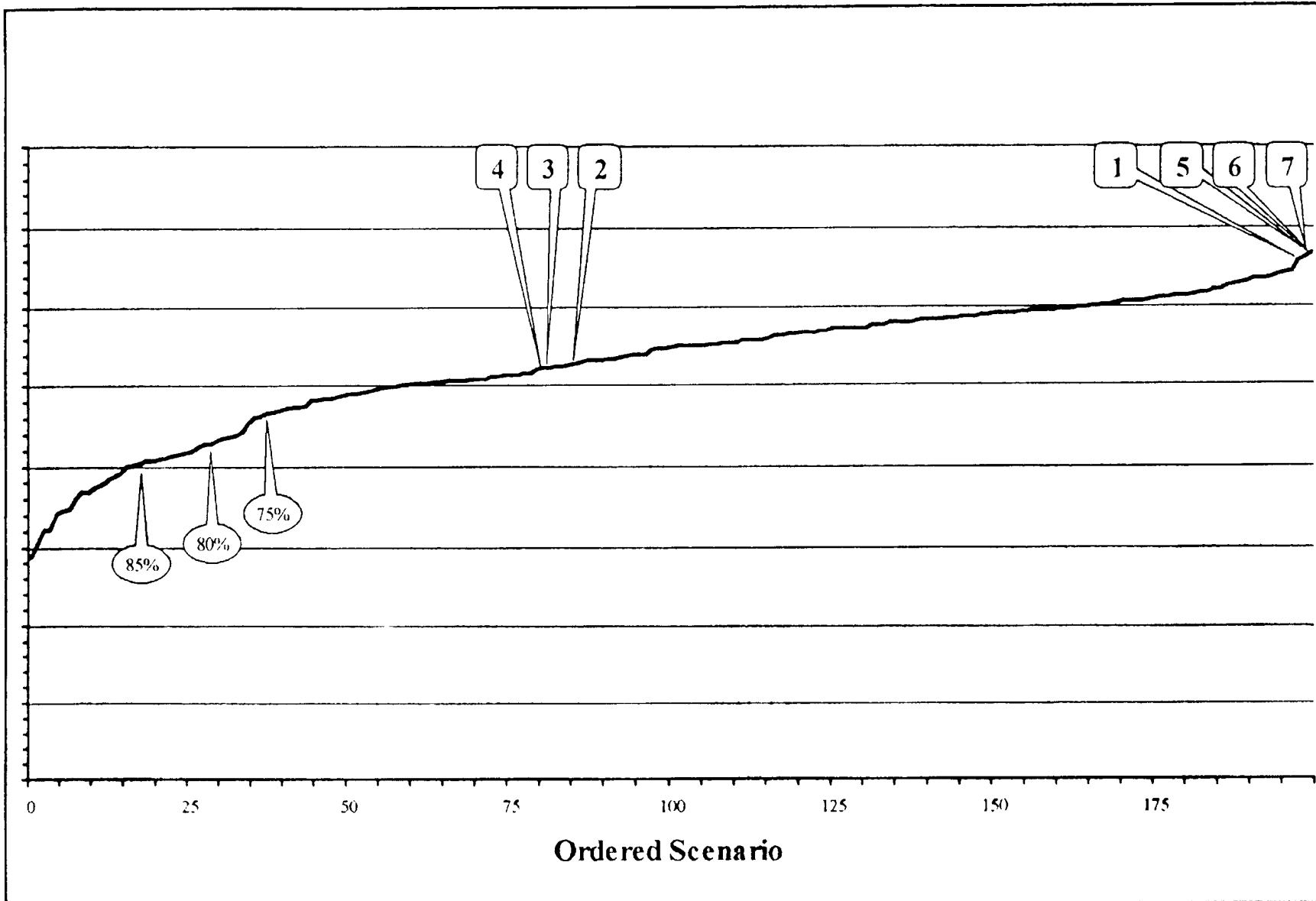
To see this, an explanation of the items circled on the charts is useful. These are what I call comfort levels. What this means is that the odds of getting results that are at or above the point on the distribution to which the circled item points is the percentage shown (with a high degree of confidence). This can be used as a standard of adequacy. Thus, if I select the 80% comfort level as my standard, reserves are adequate as long as the result at the 80% "point" is not negative. On the other hand, if the results *is* negative, this is an indication of the amount of extra reserve needed to attain adequacy.

With this in mind, all of the New York 7 will produce results more favorable than the 80% comfort level for the business underlying Chart 5. This tends to be too optimistic. This is because the result at the comfort level could be quite negative while all of the New York 7 could have positive results. This would falsely indicate no need for strengthening if only the New York 7 were taken into account.

**CHART 4**  
**Comparison of NY 7 to Random 200**  
**Block of Business 2**



**CHART 5**  
**Comparison of NY 7 to Random 200**  
**Block of Business 3**



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On the other hand, the New York 7 results will tend to produce results that are close to the comfort level for the business underlying Chart 4. If the comfort level was slightly positive, this could result in several of the New York 7 scenarios producing negative results. If only results under the New York 7 scenarios were available, this might incorrectly indicate a need to strengthen reserves.

So, what is the answer to the question, “Is the New York 7 enough?” As Gary Cooper once said, “maybe, maybe not.”

Today’s worst also can be next year’s best. We’ve seen that happen. Conceivably, if rates were to move down considerably, the down scenario actually would take you to a point where your floor guarantees come into play. What used to be one of the nicer New York 7 scenarios, could now be one of the worst.

The problem with the New York 7 is that they do not cover all or even most of the possibilities. It is the nature of the beast. Since you don’t provide a lot of information on the distribution of results, how can you possibly think that a sample of seven will be adequate? Even with all positive results under each of the New York 7 scenarios, there is no guarantee of adequacy. By the same token, one or more negative New York 7 scenarios are also no guarantee of inadequacy. About all they really show is that you need more testing.

What are negative scenarios good for? They are a red flag. If you start getting a negative or you start getting something close to zero, you probably ought to start looking at what is going on. You’ve got to have a base for sensitivity testing, compare prior periods, look at things that have happened to you over the year, try to figure out what is actually driving this change, and analyze why. Why did results differ due to interest movements? Is it because you have more surrenders? Is it because your guarantees are now coming into play, and you don’t have enough asset earnings to support them at some future duration? You can try to figure that out.

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What happens if you come out with negatives even at one of these comfort levels? There are virtually no reserves that can protect all of your risk. How much reserve is adequate? Standard of Practice 22 says assets supporting reserves should cover your obligations under moderately adverse conditions. One method that can be used to deal with this is to define “moderately adverse conditions” probabilistically. Under this concept, the reserves and the underlying assets supporting the business would do so X percent of the time. As mentioned above, I call this a comfort level. There is not one generally agreed upon percentage that is to be used in this regard. However, values in the 75–85% range are in common use. As will be seen, seven scenarios isn’t enough to determine the needed results with a high enough confidence level. In fact, the deterministic New York 7 is likely to be misleading, so you must use stochastic scenarios. You probably want to use them anyway if you have separate account products or equity-indexed annuity products. This also says the valuation actuary is fated to dwell in the tail of the distribution of the company’s results. How many random scenarios? It’s going to depend on the time you have available and the confidence level that you want to have in your distribution as to its predictive value of the tail.

What comfort level did you choose? What method did you use to pick the scenarios? I think if you have more time and run more scenarios, you get a better description of the tail of distribution. If you want more confidence in the results, you have to have a larger sample. You need more scenarios. The higher the comfort level, the farther out on the tail you want to go. You want to have confidence in any statement you make, and it should be higher than the actual comfort level we are going after. It doesn’t make much sense to say I’m being 50% certain about my comfort level of 85%.

One of my favorite methods is to simply use brute force. To do this, you run a bunch of scenarios on big machines. It’s a great way to justify getting top-of-the-line computer equipment. You run enough to get the tail of distribution to the confidence level you desire. I have illustrated a table that shows the number of stochastic scenarios which should be used (Table 1). For example, if you want an 85% comfort level, and you want to have 95% confidence that will give you a valid adequacy answer, you need 50 scenarios. Typically, if you have all the background work done to generate the New York 7, with a bit more work, you should be able to stick your computers in a corner and let them compute some stochastic scenarios while you go home for the evening or the weekend.



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**TABLE 1**  
**Approximate Minimum Number of Scenarios**

Comfort Level	Confidence Level			
	90%	95%	98%	99%
75%	25	30	35	40
80%	35	40	45	50
85%	45	50	60	65

How do you determine your amount of adequacy or inadequacy? First, rank the results of your stochastic scenarios from worst to best. Take the value of the fourth worst, and if it's not negative, you're adequate. If it is negative, you're inadequate, and you should strengthen by about that amount.

There are other methods to determine adequacy. Graduated density functions can be used by trying to curve fit results to estimate a probability density. Representative scenarios can also be used by choosing scenarios to represent groups of similar scenarios that says that these are no longer equally probable and you'll need to determine how likely each of them is. Low discrepancy sequences are another option. This involves trying to fill all the space of possible scenarios. I know they exist, but I wouldn't categorize myself as a great expert.

Some caveats are that results are based on a lot of assumptions. The assumptions ought to be realistic. The scenarios should be as realistic as you can make them. If your C-1 and C-2 are not stochastically modeled, you should ask how representative the sample distribution is. Your answer might be, "I have no idea." Because of these issues, and probably others, the most sophisticated models and software probably does not eliminate the need for judgment and common sense.

**MS. KAREN K. RUDOLPH:** I've been asked to present the small company perspective on cash-flow testing. I've had the good fortune, over my years at M&R, to work for two appointed actuaries whose clients were, for the most part, small companies. My responsibilities were in building the

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model, populating the model, setting assumptions, running the scenarios, doing all the documentation, and then proving to the appointed actuary that it was okay to sign off on this cash-flow testing.

For the most part, I'm using the AOM regulation to define a small company as a Category A or a Category B-size company. From my experience, a small company perspective on asset adequacy analysis is, for the most part, a regulatory construct. These companies will do the minimum amount to satisfy the requirement, including the required seven scenarios and perhaps two or three sensitivities specific to their business. They got along fine before performing any cash-flow testing prior to the regulation, and they probably perceived little need for it. Management had a sense of security about the company's assets being of high quality, and their liabilities were probably not loaded up with policyholder options. But, through the process of cash-flow testing, they've become aware of some of the sensitivities of their business. They now know some of the conditions which could be cause for concern—those red flags that Steve was talking about.

The approach to cash-flow testing taken by a majority of small companies may look something like this. Blocks tested tend to be interest-sensitive products found in Exhibit 8, Section A, and Section B, the deferred annuities. Section C, the supplementary contracts, and Exhibit 10 liabilities and deposit funds are sometimes tested. The not-tested items are for liabilities found in 8D, accidental death, in 8E, waiver on active lives, in 8F, waiver on disabled lives, and all the miscellaneous liabilities. The reason for this is that these liabilities are insensitive to economic conditions or they are immaterial. Typically, less than 5% of the reserve total is considered immaterial and placed in the not-tested group.

I wanted to briefly go over some assumptions that may be commonplace. Expense functions are usually a flat expense per policy with an inflation assumption. The flat per policy is somewhat the same as used for pricing with no allocation of overhead or consideration for new business. However,

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I would advocate that if you're testing interest-sensitive life insurance, you should have available to you the fully allocated expense assumptions required by the life insurance illustration regulation. This expense level could or should be one of your sensitivities. The definition of market rate is usually a Treasury rate less some spread.

The next item is wiggle room. This is a topic I suppose is fairly commonplace in the discussions of how to set assumptions. Should there be an expectation of a problem, or is there a change that can be made to assumptions? Can that change still be supportable by experience and also within your comfort level as appointed actuary? It is fairly commonplace within smaller companies to have sparse data on which to set assumptions. Therefore, it may be advisable to opt for a conservative assumption, one that would create a more onerous test as opposed to more liberal assumptions. Projection horizons have varied from short periods, such as five years for GICs, to 30 years for an interest-sensitive life block with high persistency. It may also be advisable from a regulatory perspective to examine interim results if your projection horizon is any longer than 30 years.

What about aggregation considerations for lines of business with differing projection horizons? If your lines of business being tested are 20 years for one line and 30 years for another line, you would probably end up taking the present value of any amounts of surplus and then adding those results together after individual testing. Where adequacy is being determined in aggregate, the memorandums typically are showing results by line of business and also in aggregate. It's not as if we're trying to hide the negative result on one line by aggregating it and reporting the aggregate and line of business together. Seven scenarios as well as plus sensitivities, like basing your tests on the December 31 yield curve when you're testing those performed on September 30 are required. Another sensitivity to the required seven scenarios could be to take a modified rising where the annual increase might be 30 basis points instead of the required 50. Typically, lapse and mortality assumptions are sensitivity-tested, and, again, I would say that expense levels should be sensitivity-tested. Fully allocated expenses may be available due to illustration regulation requirements.

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What is the definition of adequacy? There are different ways to say what ends up meaning the same thing. Present value of net cash flows to and from the line, including capital gains and losses, or accumulated surplus at the end of the projection, is positive. I've also seen present value of excess of market value of assets over a market value of liabilities where the present values are taken at net after-tax portfolio rates. Those are all fairly commonplace ways to say the same thing. Interim results are typically reported in the appendices of these memorandums but not discussed in detail.

I could come up with two cases where additional reserves were established. I won't go into these in detail, but in one case a scenario failed. The scenario was simply further tested to find the limit to which the interest rate could be increased and/or decreased and to find the threshold at which that scenario was passable. These results were then discussed in the memorandum. It was explained and disclosed in the memorandum, and no additional reserves were set up. The second case actually had two scenarios fail. These were the same two scenarios that have been problematic for more than the current year. Additional reserves were established then and continue to be maintained for the current year.

There are other reasons for additional reserves. I simply put that in as a reminder that it's not always cash-flow testing that facilitates additional reserves. Sometimes actuarial guidelines can be the precipitating event. A peripheral concern for the smaller company, first and foremost, is probably cost. Smaller companies may not have the actuarial expertise or the staff to get this work done, so they'd have to outsource. This is one of the reasons that performing the minimum amount of testing required is a characteristic of the smaller company. I was going to quote some costs that we have billed companies in the past. I'll forego that and just say that cash-flow testing, a deferred annuity, and a universal life (UL) block of business is not driven so much by the size of the block but, rather, by the number of contract types that are in each of those blocks. The actuary must gain a certain amount of knowledge of the product and also the underlying experience. This takes time. Time translates into money.

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Difficulties encountered by the consultant as appointed actuary are things like, getting the management to document their crediting strategy. That might sound a little off-the-wall, but there are companies with management that haven't actually documented some of the procedures they go through in setting their crediting strategies. Again, experience studies may be lacking. The consultant's choices here are to perform those experience studies. That is very time-consuming and also requires the Information Services (IS) department to take on additional tasks just when their plates are the fullest. The other option is to use industry experience. Another concern for the consultant is getting management to document their investment strategy going forward.

Clarity of models comes to light under the microscope of other demands. Appraisal and closed block work are examples. How much effort is really put into the models that are used in small and large companies for cash-flow testing purposes? I would like to recap some recent experience of companies. The first was a company that began with their cash-flow testing model and used it for appraisal purposes. It was a very complex model for single premium and flexible premium deferred annuity, annuities in benefit, universal life, and supplementary contracts.

Upon examining the model, it was found that certain contractual components were incorrect or just plain missing, making the validation of the model very difficult. This model was developed several years ago by actuarial staff no longer with the company. This was always the answer that we got when we asked questions about the model developed several years ago and used ever since. Neither the sales structures nor the mappings had ever been reviewed since the inception of the model. The point here is that someone needed to take ownership and periodically review the cash-flow testing model and its mappings.

The second company used their cash-flow testing model as the stepping stone for analyzing the run-off of business under a closed block formed under the Mutual Insurance Holding Company Act. Very little static or dynamic validation was ever performed. A representative plan mapping was based on some aspect other than plan characteristics, insurance amounts, fund amounts, guaranteed rates, or statutory reserve levels. Once reviewed, put into play and reviewed, the static validation was very poor.

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On the other hand, Company #3, also using a cash-flow testing model for closed-block projections under the Insurance Holding Company Act, had a very good cash-flow testing model. However it was not necessarily good enough for a closed block. Since reserve bases had been modeled together, female risks mapped into male risks, smokers into non-smoker cells. All of these mappings may be acceptable for cash-flow testing purposes but not so for closed block projections. My point here is that intercompany models should be reviewed based on what they are being used for. As a result, now they have a very good cash-flow testing model.

What are the modeling requirements of the AOM regulation? Section 9 outlines the requirements for documentation of plans, liability assumptions, and asset assumptions, but not validation requirements. That begs the question—how much validation is really being performed for cash-flow testing purposes? Are companies validating the resulting dynamic items like surrenders and death benefits, renewal lapse rates, renewal premiums, and commissions? You need to ask yourself—have I validated my cash-flow testing model on static items as well as dynamic items, and could my model be used for other purposes?

Table 2 is a result of using 1997 One-Source data and sorting it into the different company categories. I'm calling this the current position of the small company, and by current position I mean under the current AOM regulation. I split the population of 1,471 companies available in the One-Source database between company category groups under 20 million of assets: 20–100, 100–500, and then 500 and over. The distribution is shown as follows: 41% are in Category A, 20% in Category B. Based on the current exemption qualifications, the number of companies that fail at least one ratio are 7% for Category A, 13% for Category B, and of the companies that have to do cash-flow testing every three years, 22% would fail between those three-year end points.

It's interesting to note that more companies violate the annuity and deposit fund ratio than any other ratio. Less than 2% violate the non-investment-grade bond ratio. Less than 3% violate the cap and surplus ratio. In summary, 91% of the companies that might potentially never have to cash-flow test (Category A and B), satisfied the exemption ratios during 1997.

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**TABLE 2**  
**Current Position**  
**Companies Not Qualifying for AOM Exemption**

A	<\$20m	44/607	7%
B	\$20–\$100m	37/288	13%
C	\$100–\$500m	51/228	22%
D	\$500+m	none	

In the general session we heard about proposed revisions to the AOM regulation. I will outline these proposed revisions for you based on the September 1997 draft. There are several substantive changes. The three-year phase-in has been eliminated for additional reserves. In Section 6, the exemption eligibility tests replace the ratio of annuity and deposit fund reserves to assets with ratios of reserves to total liabilities—where the reserve categories are three part, and reserves from separate accounts are included. The categories are interest-indexed products. The second category is long-term care, noncancellable health, structured settlements, and immediate annuities. The third category is deferred annuities, deposit funds, GICs, interest-sensitive life, single-premium life, UL (UL was not included in the first category).

The ratio of non-investment-grade bonds to cap and surplus has been replaced by a similar ratio, but collateralized mortgage obligations (CMOs) with flex scores greater than seven, zero-coupon bonds, asset-backed securities, and investment real estate have been included. Again, this ratio must be less than 50%. All companies would be required to submit actuarial values computed on the basis of statutory accounting principles as defined in the *NAIC Accounting Practices and Procedures Manual*. These values will be submitted with the actuarial opinion provided in an identical format to Exhibits 8, 9, 10, and 11, and Part 1.

Even though both Section 7 and 8 now have state-of-domicile wording, the commissioner may request the submission of reserves on the basis of the insurance laws and regulations of his or her

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state. The commissioner has to state the reason for the request, and the company has 30 days to comply. They must include an opinion stating reserves have been computed in accordance with the laws of the state, and criteria of Section 6 determines the style of the opinion.

In Section 7, besides changing the wording of some of the reliance paragraphs, the opinion paragraph will be revised. It will state that reserves are computed according to statutory accounting principles and are at least as great as the present value of the difference between future cash-flow disbursements and future cash-flow receipts calculated using best-estimate assumptions.

This requirement for gross-premium-valuation analysis may be waived by the commissioner of the state of domicile. The commissioner in a non-domiciliary state may reinstate that requirement for opinions filed in his or her state. In Section 8, there are also changes to reliance paragraphs including reliance on investment personnel. The opinion paragraph for Section 8 also includes the reference to statutory accounting principles. A Section 8 opinion would read: Meets the requirements of the laws and regulations of the state of domicile. Revisions to the AOM would require that an asset adequacy issue summary be prepared and submitted by March 15, as a matter of course, instead of as a matter of state preference. You would submit it to the commissioner in each state that has adopted the amendments to the AOM regulation. The remaining sections are simply revised to require more detail on assumptions and that methods be documented in the memorandum. Also, normalization of the yield curve is called for under certain economic conditions.

What is the impact of revisions to the AOM regulation? The exemption is now driven more by asset and liability types as opposed to asset and liability levels in total. Even if the company is exempt, gross premium valuation is required by Section 7 unless waived by your domiciliary commissioner. Then it might be required from other states. I would expect that small companies or smaller companies will again continue to perform the minimum requirements.

If a company from Category A or B has always been exempt, then the revisions will require them to construct a model and perform a gross premium valuation analysis. The approximately 800 companies that potentially have never been required to cash-flow test would be required to perform



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gross-premium valuation under the proposed revisions to the regulation. Although this may be costly and time-consuming for these companies, it may be a safeguard providing insight into the future well-being of these smaller companies.

**MR. STEPHEN A. ZONCA:** When Jerry first approached me about speaking at this session, my initial reaction was to ask what can I teach this group about cash-flow testing. Therefore, we decided to go at it from a different angle. I'm not here to give you hints or suggestions on what scenarios to test or what tricks to apply to simplify your work. I am here to tell you what you can do once the testing is done, when the results are in, and you have to strengthen reserves. No one wants to be the bearer of bad news. It is especially bad if you can't offer any solutions, so I am presenting a possible solution to the problem using reinsurance. The question may be, why reinsurance? Reinsurance reserve strengthening is fundamentally a capital management issue. Where are you going to get the surplus or capital to fund the increase in reserves? Reinsurance is one of several tools available to manage capital, along with other tools like debt, equity, or hybrid products. Reinsurance, however, is one of the few tools available to manage that risk. Debt and equity in and of themselves cannot help you control any product risk.

Let me relate to you a recent experience I had. I went to the Corporate and Chief Actuaries' Open Forum earlier this year, and two of the hottest topics on the agenda were capital management and risk management. Discussions had been going for about an hour when they finally turned to reinsurance. It seems that some people in the crowd had forgotten about reinsurance as a risk-control tool.

How does reinsurance raise capital? We know that increased risk requires increased capital, and certainly reinsurance reduces risk. Therefore, reinsurance reduces capital needs, and in many cases reinsurance agreements have a ceding commission paid to the ceding company. These ceding commissions increase capital. A truism about reinsurance is that all forms of reinsurance have two goals. Reinsurance tries to accomplish risk transfer, and reinsurance tries to accomplish capital

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management. Financial reinsurance, which is what our group is a specialist in, is a subset of reinsurance that focuses primarily on the capital management aspect of reinsurance, although not exclusively on the capital management.

Most people generally recognize the first of these goals—the risk transfer goal. However, they fail to see the second result even in some of the most basic reinsurance coverages.

I'll go back to the Corporate and Chief Actuaries' Open Forum. During the session a question came up about how many companies use financial reinsurance. Nobody raised their hand, which was kind of surprising to me, especially since we had actuaries from four of our client companies in the crowd. At lunch later that day I asked the question a different way: "How many companies have excess of retention YRT coverage?" Of course, they all raised their hand. Then I asked, "How many of you have zero first-year rates?" All of a sudden the capital management effect of even the most basic of reinsurance coverages dawned on them.

We discussed some of the benefits that reinsurance provides. Additional capital is a benefit. Reinsurance provides greater efficiency because it allows you to write more business in order to build critical mass. Reinsurance offers specialized expertise and helps you develop new products. Reinsurers know what other companies are doing in the market. They can help you underwrite those difficult cases. Reinsurance offers access to greater diversification because you can write more and different business. You can keep your field force happy while passing off the risks you may not be comfortable with. Also, reinsurance offers access to potentially less expensive capital because reinsurers specialize in insurance, and they know what direct writing companies are going through. Therefore, they may not ask for much of a risk premium in the capital they provide.

Before I get into more specific solutions to capital management with respect to cash-flow testing, I want to go over a simplified example to show you how it works. This will benefit those who might not be familiar with financial reinsurance. We're going to discuss a single premium immediate annuity.

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Let us assume we have a premium of \$1,000, a commission of \$50, and a statutory valuation rate of 7% conveniently chosen to develop an initial statutory reserve of \$1,000 on this product. I'm going to put target surplus for this company at 4% of reserves and assume the company is earning an investment rate of 8.5%.

Before they issue the product, they need to have \$90 in surplus on hand, all in cash and invested assets (Table 3). The \$90 is needed to pay for the commission and for the risk-based capital (RBC). You can see after the issue of the product the cash and invested assets has gone up to \$1,040, increased by the premium, and decreased by a \$50 commission. A \$1,000 liability leaves \$40 in surplus which, again, you need for your RBC.

**TABLE 3**  
**Balance Sheet For Reinsurance**

	<b>Before Issue</b>	<b>After Issue</b>
Cash and Invested Assets	90	1,040
Liabilities	0	1,000
Surplus	90	40

We would characterize this situation for a company as having experienced two types of strain: a \$50 earnings strain and a \$40 RBC strain. We can look at their income statement before reinsurance (Table 4). You can see a \$50 pre-tax loss caused by commissions and reserves that are more than the premium. You can see in years one and later that there is enough investment income when combined with the decrease in reserves to offset the benefit payments to produce profits. After four years, the cumulative pre-tax profits are \$7.60. It took you four years, on a cumulative basis, to recover the initial \$50 strain.

**TABLE 4**  
**Income Statement Before Reinsurance**

	At Issue	Year 1	Year 2	Year 3	Year 4	Total
Premium	1,000.0	—	—	—	—	1,000.0
+ Investment Income	—	85.0	82.7	80.4	78.1	326.3
- Commission	50.0	—	—	—	—	50.0
- Benefits	—	96.9	95.0	93.1	91.2	376.3
- Increase in Reserves	1,000.0	(26.9)	(26.9)	(26.9)	(26.9)	892.4
= Pre-Tax Profits	(50.0)	15.0	14.6	14.2	13.8	7.6

I have an example of what reinsurance can do on this contract. In this example, I'm going to use a cash ceding commission of 3% of reserves. We will be using modified co-insurance. The ceding company is going to retain both the assets and the liabilities. The ceding commission is scheduled to amortize evenly over a three-year period. That's a \$10-a-year repayment. That is how the reinsurer is scheduled to receive payment of their ceding commission. There would be a 7% annual charge on the unamortized ceding commission, and that is for both the cost of the cash and the risk fee for the reinsurer. Those with profits in excess of that needed to pay for the amortization of the ceding commission and the fees are experience refunded.

Now if we went back to the balance sheet, you would see that there's a \$30 increase in cash and invested assets as a result of the ceding commission being paid in cash (Table 5). Liabilities didn't change. This is the modified co-insurance (MODCO). The assets and the liabilities remain on the ceding company's books. The \$30 increase in assets flows through to surplus. We know the company only needs to retain \$40 in surplus for the RBC. It allows them to release the \$30. Currently the RBC regulations leave the RBC on the ceding company books for MODCO transactions. There are, however, proposed revisions under consideration that are anticipated to be adopted in 1999 that would allow most of that RBC to be transferred to the reinsurer.

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**TABLE 5**  
**Balance Sheet After Reinsurance**

	<b>Before Issue</b>	<b>After Issue</b>	<b>After Reinsurance</b>
Cash and Invested Assets	90	1,040	1,070
Liabilities	0	1,000	1,000
Surplus	90	40	70

I've prepared a table that shows what happened to the income statement after reinsurance (Table 6). I should note that in the interest of making this table readable, I've simplified the accounting somewhat. Under U.S. statutory accounting principles, there would need to be several more income statement line entries, but the end result would be the same.

What is the general effect of reinsurance? You can see in the first year the ceding allowance comes through offsetting the \$50 pre-tax loss and turning it into only a \$20 loss. In years one, two, and three, you can see the repayment of this allowance coming back. This reduces income in years one, two, and three, and in year four we're back to the original income.

**TABLE 6**  
**Income Statement After Reinsurance**

	<b>At Issue</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Total</b>
Premium	—	—	—	—	—	—
+ Investment Income	—	82.9	81.3	79.7	78.1	322.1
- Ceding Allowance	30.0	—	—	—	—	30.0
- Ceded Reserve Adjustment	1,000.0	(106.9)	(105.0)	(103.1)	(91.2)	589.5
- Commissions	50.0	—	—	—	—	50.0
- Benefits	—	—	—	—	—	—
- Increase in Reserves	1,000.0	(26.9)	(26.9)	(26.9)	(26.9)	892.4
= Pre-Tax Income	(20.0)	2.9	3.2	3.5	13.8	3.4

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I've summarized these results on this income statement comparison (Table 7). What happens is, at issue, the impact of reinsurance is to generate a benefit of \$30 and positive impact on income. In years one, two, and three, you see the repayment of that capital being provided. You can calculate these amounts. In the first year, there was a \$30 outstanding balance at the beginning of the year. The 7% charge is the 2.1. Therefore, you have repayment of the 10 plus the 2.1%. Similar calculations are made in each succeeding year. In year four we have no impact anymore as a result of reinsurance. The total impact was 4.2 cost, but that's a cumulative cost. However, if you perform a net present value of calculation at 10%, the result is a 1.2 benefit. Reinsurance had a positive impact when you're looking at it on a net present value basis.

**TABLE 7**  
**Income Statement Comparison**

	<b>Before Reinsurance</b>	<b>After Reinsurance</b>	<b>Impact of Reinsurance</b>
At Issue	(50.0)	(20.0)	30.0
Year 1	15.0	2.9	(12.1)
Year 2	14.6	3.2	(11.4)
Year 3	14.2	3.5	(10.7)
Year 4	13.8	13.8	0.0
Total	7.6	3.4	(4.2)
NPV @ 10%	(3.8)	(2.4)	1.2

To help you decide whether to use reinsurance over other capital management tools like debt or equity, let me list some of the advantages of reinsurance. Reinsurance is generally not considered leveraged by the rating agencies or regulators because there's no requirement to pay back the capital provided. It will only be paid back if there are profits in the reinsured business. Reinsurance is

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flexible both as to the amount provided and the payback schedule. There are no up-front costs with reinsurance. You may have underwriting costs and investment banking fees on debt and equity. Sometimes that induces you to raise more capital than you can effectively employ immediately. Reinsurance doesn't dilute ownership as equity does.

Reinsurance has a lower cost than equity. Reinsurance is typically in the 6–9% range annually versus a 12–15% hurdle rate you might have on any equity you raise. Reinsurance protects against losses because the reinsurer's payments are not limited to the capital provided as it would be in debt and equity. The reinsurer would have to cover any losses if they merge on the reinsured block. There is no disintermediation risk with reinsurance, as you might have a mismatch between the term structure of debt and how the capital is invested. Also, reinsurance may produce statutory earnings which neither debt nor equity can do.

However, reinsurance does have some disadvantages you should consider. Even though it does generate income, it may be considered taxable income, and you would have to pre-pay taxes on that block of business. Reinsurance costs may also be higher cost than debt when you look at it on an after-tax basis.

I'm now going to discuss a few examples of how to use reinsurance to deal with cash-flow testing problems. These are a little more specific to the issue at hand, as they involve having to increase reserves as a result of cash-flow testing. The first possibility to consider is what I would call liability portfolio trading using reinsurance. You can use this to transfer offsetting risks. There might be some products where you fail some scenarios. You have another company passing those scenarios, but it's failing other scenarios that you are passing. You can balance the risks. An example of this would be to balance short duration and long duration liabilities. You may be able to do that on your own through direct sales, but if you don't have the salesforce or the distribution channel in place, you may be able to do it via reinsurance.

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However, having said this, I will note that it is difficult to accomplish this liability portfolio trading because of a few critical issues. The first issue is your degree of comfort with the other company's product management, product pricing, investment strategy, and spread management. Another issue is the availability of offsetting risks because everyone tends to sell the same products. When there are problems with that product, the supply of the offsetting risk may not meet the demand.

An alternative available to some of you may be liability portfolio trading with an affiliated company. This overcomes the first issue noted previously because you should have, hopefully, the same or similar product management. However, the availability of offsetting risks may still be an issue.

I should note that this balancing process reduces overall risk, so it reduces capital needs. You might see that directly in the co-variance adjustment in the RBC formula. If, for example, the offsetting risk is C-2, and your company is C-1/C-3 heavy, the co-variance adjustment will reduce the marginal addition RBC needed.

I will note, however, that you have to be careful about a couple of issues on affiliated company reinsurance transactions. Affiliated company transactions come under more regulatory scrutiny primarily in the form of pre-approval by the state of domicile in many states. You also have to be careful about the tax effects.

The IRS has the ability to unwind, for tax purposes, any reinsurance treaty they feel has the intent to avoid taxes. I'll add that you can use these affiliated company transactions and modify them in a certain way to inject outside capital by inserting an outside party. You can utilize a structure that we call three-party reinsurance because it has two similar treaties. The first treaty is between the direct writer and the reinsurer, and the second treaty is between the reinsurer and an affiliate of the direct writer. The surplus generated is usually generated by the difference in terms between the two treaties. For example, the first treaty could have a ceding commission—a front-end ceding commission. The second treaty would have none. Surplus can be cash or non-cash depending on your needs. The structure enables a ceding company to manage assets and credited rates.



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You can utilize the inherent flexibility of reinsurance to leave the assets at the direct writer using a modified co-insurance, or, transfer the assets to the affiliate using co-insurance. You can use the flexibility of reinsurance, leave the profits at the direct writer via experience refunds or transfer those profits to the affiliate.

Another possible reinsurance solution to handle problems surfaced in cash-flow testings is to transfer or sell the risks using reinsurance. I noted earlier that reinsurance can be used by direct writers in cases where you don't want to turn off sales. You want to keep your distribution systems happy, but you don't want to take on too much risk. There may also be situations where the reinsurer can offer an attractive price for the business. The reinsurer may have a better appetite for particular risks. They may be more comfortable or experienced with those risks. A reinsurer may have a desire to increase volume in a certain type of product and be willing to offer a good price.

Part of the reason for the attractive price is that the reinsurer may have a structural advantage with respect to RBC or tax. I've prepared an example of this (Table 8). The structural advantages are some things that the reinsurer may be willing to share with you in terms of a price they would pay on the block. I'm going to go back to the earlier single premium immediate annuity (SPIA) example I had and add one additional piece of information. We are going to use the tax reserve valuation rate of 7.9% versus a 7% statutory rate. What this does is create a situation where you have to pre-pay taxes versus statutory income.

In the previous example we had a \$50 statutory pre-tax loss, but here the tax reserve is \$930. You have \$20 of taxable income. This leads to the result shown in Table 8. The 30-year internal rate of return (IRR) on distributable earnings shows distributable earnings defined in a typical way: after-tax statutory profits, less an increase in target surplus, plus after-tax investment income on target surplus. As a direct writer with a 35% tax rate and a 4% RBC, you are going to achieve an 11.2% rate of return.

**TABLE 8**  
**30-Year IRR on Distributable Earnings**

<b>RBC</b>	<b>Tax Rate</b>	
	<b>35%</b>	<b>0%</b>
4%	11.2%	18.6%
1%	13.8%	23.8%

However, you can find a reinsurer that is heavy in C-2 risk and can take advantage of the RBC covariance adjustment, bringing on this product which is heavy in C-1/C-3 risk. With that same \$50 commission, the reinsurer would be able to achieve a 13.8% rate of return. The reinsurer may be able to pay more than the \$50 commission for this business and still achieve its desired rate of return so you can share that excess return in some way.

Another possibility is finding a reinsurer who is not in a current tax-paying situation. They may have some about-to-expire loss carryforwards, so a reinsurer with 0% taxes and a 4% RBC requirement would achieve a 18.6% rate of return. That benefit could be shared with the direct writing company. If you're lucky, you can find a reinsurer who has both of those advantages, and they can achieve a 23.8% rate of return with the \$50 commission. It may be able to offer some of this benefit back to you as the form of a higher ceding commission. I will reiterate, though, you have to be careful about transactions with significant tax effects since the IRS does have some authority to review and potentially unwind reinsurance transactions whose primary intent is to avoid paying taxes

Finally, I'll briefly go over a few other possible reinsurance solutions. You can consider using non-proportional reinsurance to limit or hedge your risks and carve out some of the options contained in your product and put them to a reinsurer. You can utilize financial reinsurance on other blocks of business that are not causing cash-flow testing problems to generate needed surplus for you. For those of you who are lucky, if the testing indicates reserves are much more than adequate, the tested block may have the ability to generate surplus via a financial reinsurance transaction.

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**MR. KERRY A. KRANTZ:** I'm with the Florida Department of Insurance. I have a question for each of the three speakers. If asset adequacy testing reveals that additional reserves should be set up at year-end, and the company continues to sell that kind of business, and gross premium valuations determine that the new business would also be unprofitable should the company be testing the new business and bulking-up their additional reserves quarterly?

**MR. SEDLAK:** If they are in a position where they do have to set up extra reserves, and they are growing themselves in such a way that they're going to have an even larger problem, they should be using some windage on their quarterly financials to avoid a large capital incursion at year-end.

**FROM THE FLOOR:** Karen mentioned that the cash-flow testing that she has done leans towards Exhibit 8, Parts A and B. The example I just mentioned may be an accident and health reserve for a group company with a gross premium valuation. That is just a point I wanted to make. The third question dealt with reinsurance and how regulations tend to occur. In the area of reinsurance, if you have a three-company type of situation where the third company is an affiliate, or even a situation where the third company is the first company, you may have a reinsurance treaty and a retrocession agreement where there is not a transfer of risk. Therefore, companies need to be careful that they have their attorneys review the applicable statutes and regulations dealing with reinsurance in that area.

One of the risks that wasn't mentioned in a reinsurance agreement is regulatory risk. The regulation in the future may not be bad, but even the current regulation may unwind the treaty and cause an economic impact on your company.

**MR. ZONCA:** The structure I showed in my example was not going circular. It showed the transfer of risk from direct writer to reinsurer. Some of that risk may end up transferred back to an affiliate. The affiliated company would have to recognize any risk it was assuming as part of that reinsurance transaction with respect to cash-flow testing and RBC. We do not set up reinsurance transactions so that they are circular. We usually move them along the line to a different, but affiliated, legal entity.

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**MS. RUDOLPH:** I have a comment about the first question you presented. I have heard of companies that cash-flow test mid-year so they are not hit with any year-end surprises. Your comment about quarterly testing is parallel to that example.

**MR. MICHAEL E. MATEJA:** I work for SS&C Analytics. I have a comment on the presentation Steve gave on reserve adequacy. There is another factor I consider very important when thinking about reserve adequacy, and it is aggregation. You get a different look at this if you take a total company approach as opposed to going down deeper and ultimately getting to a plan level. My approach is that I would rather have reserves adequate at the lowest possible level. A compromise that you reach is profit center. To the extent that there is a balance sheet income statement-type operation available, you then insist upon adequacy at that level. Therefore, one management does not have an impact on another management or on the total. That is a practical consideration in terms of how that is achieved. As the corporate actuary, you are in a position of taking a higher-level look. Then you can say, for example, if I have adequacy at any of these lower levels when aggregated, I have a degree of comfort that I didn't otherwise have.

**MR. SEDLAK:** Yes, I agree with that. I think aggregation can make a very big difference in your answer. Of course, for valuation the desire is to be able to aggregate everything as much as you can.

**MR. LOCKWOOD:** I agree with Mike's notion that there is the management consideration on product lines as far as who is responsible for what bottom lines and what profitability. That can have an effect on how you decide on adequacy and at what level.

**MR. TERRY JAMES BOUCHER:** I have a comment on cash-flow testing of variable annuities in the payout phase. To the extent that it is variable, and you are passing along the investment risk, the company does relieve itself of a lot of risk compared to the fixed annuities. However, on the expense and mortality guarantee, you could actually expose yourself to a higher risk. If you've mispriced your annuity and you're inadequate from a mortality point of view, an increasing market could emphasize the risk as opposed to the fixed annuity. There is a need to cash-flow test variable annuities with concentration on the C-2 risks.

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**MR. SEDLAK:** Yes, that's a very good observation.

**FROM THE FLOOR:** I have several lines that I test, and I get varying results such as offsetting negatives and positives. My question is to what level—in regard to this other comment—do we need to have the adequacy? I've had questions from regulators as to what this particular line, that did more poorly, would need in order to be sufficient on its own. I was curious as to whether there are any trends toward testing adequacy and the opinion of adequacy at a more segmented level.

**MR. SEDLAK:** If I understand your question correctly, you are asking about standards for adequacy under so-called moderately adverse conditions?

**FROM THE FLOOR:** No, I'm thinking more in terms of standards for adequacy among the lines. I had a question from a regulator. I gave all the results of my different lines. I showed how certain lines' sufficiencies more than made up for deficiencies of other lines under the scenarios that gave that particular line trouble. I got a question back as to how much I would have to set up for the line which is deficient? Are we going to have to start making statements in our opinions regarding deficient reserves on a line-by-line basis even if there is no overall deficiency? Do you see what I'm saying?

**MR. SEDLAK:** Yes.

**FROM THE FLOOR:** To what level are we going?

**MR. SEDLAK:** This is an aggregation question.

**FROM THE FLOOR:** Right.

**MR. SEDLAK:** The model allows you to aggregate as long as you disclose certain things, and you have consistency in scenarios between the lines. As long as all these conditions are satisfied, you

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should be able to aggregate fully. I think what you are saying is, in your particular circumstance, the regulator wanted additional information, which is his or her right. Alternatively, there is some kind of additional limitations on aggregation that are manifesting themselves.

**FROM THE FLOOR:** Has there been any move among working groups to be a little more concerned with a less aggregated approach?

**MR. SEDLAK:** I don't know of any.

**FROM THE FLOOR:** Okay.

**FROM THE FLOOR:** I don't know of any either. In New York, they have different requirements or limitations on aggregation. This involves major lines of business; life versus annuities versus health. I am not aware of any other states that are looking at it that way. It is not necessarily implying that there is a need to set up reserves. It gives an informational point of view according to my understanding.

**FROM THE FLOOR:** Basically the future valuation method, if it's a holistic one, would aggregate things, but the company would still need to have the actuary file a report to the board. I believe this would be a confidential report that would state the company's plan. If, for example, they intend to perhaps sell lines of business or purchase lines of business, they may need to know if that line of business is supporting another line. If they sell the profitable line of business, what impact would that have on the company's position afterwards?

**MR. MARK J. GREENE:** I'm with the New York State Insurance Department. I wanted to clarify the prior question about aggregation. I've had several questions come up regarding that. In New York you're required to separately test life, health, and annuity as defined in the law and in the regulation. You are allowed to combine general account and separate account life, general account and separate account annuity. Prior approval is necessary to aggregate across the statutory lines of business. By and large, that's pretty easy to get.

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Our main concerns have to do with policyholder equity as it relates to dividend practices. These practices involve combining participating business and nonparticipating business across lines and possibly combining products that might be more commodity-based. Commodity-based products are here one day and gone the next. They take advantage of product balancing from that aspect. However, in New York, if anyone wants to aggregate across lines, they should send a letter before their filing and get prior approval.

