

**1985 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS**

SESSION 5

MAKING VALUATIONS FROM OUTSIDE THE ORGANIZATION

MR. LAWRENCE V. DURLAND, JR: Over the past three years, we actuaries have been addressing an ever-increasing number of questions about the financial soundness and solidity of life insurance companies. Some of these questions have come from company management as an outgrowth of other analyses we have performed. But, by far, most of the questions have come from outside the insurance industry — from prospective clients and other interested parties, including prospective purchasers of life insurance companies. The public seems to have lost its confidence in some of the methods of the past.

The people asking such questions are expressing a concern that no one has yet been able to allay. That concern is about the long-term financial soundness of today's insurance companies. Poor financial disclosure by many companies has contributed to this concern. Recent failures or near failures of insurance companies, large and small, have increased the public's awareness of the fact that all insurance companies are not equal. The increased emphasis on the investment component of the products offered by life insurance companies today is now being perceived by some segments of the insurance buying public, generally the more sophisticated segments, as adding another dimension of risk. If companies offering short to intermediate guarantees could fail, what does that mean for companies offering long-term guarantees? True, we, actuaries have always known that the risk was there, but now we have also made the public aware of it.

The long-term perspective on the question of financial soundness has drastically changed our views about what appropriate measures of financial soundness should look like. We can no longer rely on short-term or static measures such as surplus ratios or even risk-adjusted surplus ratios. Long-term valuation of a life insurer's financial soundness has to address long-term effects, including the profitability of currently issued policies and the structure of the company's current investment portfolio.

At Towers, Perrin, Forster, & Crosby (TPF&C), many clients were asking us to perform a function similar to that of the valuation actuary, but from outside the company. This meant that we had to work from publicly available data, generally, to form an opinion about an insurance company's long-term ability to meet its obligations. This is a key point — we use published data with all of its defects. I also must emphasize that we work with relative, not absolute, measures.

Once we had embarked on this path for company valuation, we learned that the approaches that seemed most appropriate led to a different perspective than we had used in the past. We started working on the basics and are continuing to develop more sophisticated approaches.

In the balance of my presentation, I would like to address five aspects of the external analysis of the financial solidity of life insurance companies:

- o Cash flow is what counts.
- o Financial reporting systems often work against you.
- o Don't worry, it's reinsured!

- o Investment strategy has two sides.
- o The stockholder has to get paid too.

Cash flow is what counts. That statement does not seem too revolutionary within the context of contemporary work in the area of the valuation actuary. But, when we, at my firm, first started down the path, we had to cut away some heavy overgrowth. Primarily, this overgrowth was a focus on statutory surplus and how it would develop over time. The old theory stated that all you needed to know about the financial health of an insurance company was contained in its surplus ratio.

We started down this path, quite frankly, without considering many of the aspects that were ultimately to be addressed by the professional committees looking at valuation principles. However, we did have a lucky break — most of the initial questions took the form: How can I be sure that the company can meet its obligations? Since the people asking such questions were quite frequently thinking of specific payments, it was easy to focus on a company's line cash flows. From there it was a simple extension to begin focusing on the total cash flow available to the company. If we could get a handle on the anticipated future cash flow for the company, we felt that we could analyze it under different scenarios and, hopefully, draw some valid conclusions.

Being on the outside, working with only public data, generally Annual Statements meant we had to rely on some very broad modeling to answer these cash flow questions. We used simple aggregate models designed for personal computers. Sometimes lack of data is a blessing in disguise! We actuaries have a lot of

experience modeling traditional insurance products from Annual Statement data. We can do an adequate job on premiums, benefits, expenses and so on.

For example, we can use a series of data on insurance issued and in force from prior Annual Statements and test the fit of lapse rates until we have something that makes sense.

Fitting Lapse Rates

<u>Year</u>	<u>Actual In Force</u>	<u>Expected In Force</u>	<u>Actual/ Expected</u>
Z-3	2,949	3,001	.98
Z-2	3,225	3,273	.99
Z-1	3,530	3,568	.99
Z	4,264	4,314	.99

Assumptions: Average duration of initial existing business: 5 years

Lapse rates (by duration)

.150 .100 .100 .095 .095 .090 etc.

We used only basic modeling techniques — get the data for the base-line period, fit the assumption curves and then move forward through time, always asking: "Is it reasonable?" We can do likewise for death benefits working with claims per \$1,000.

Fitting Mortality

<u>Year</u>	<u>Actual Claims Per \$1,000</u>	<u>Expected Claims Per \$1,000</u>	<u>Actual/ Expected</u>
Z-2	3.10	2.76	1.12
Z-1	2.85	2.86	1.00
Z	2.92	3.04	.96

Issue Ages:	15	25	35	45	55
Distribution by Age:	0%	30%	40%	20%	10%

Mortality: 108% of TPF&C 65-70 Select & Ultimate Male

The major problem with this process has always been getting reserves and reserve increases that looked reasonable. It was here that we, at my firm, first began to appreciate the beauty of analyzing cash flows. If we could reduce the impact on the final result of reserve increases, our life would be much easier. I submit that any reserve basis, statutory or GAAP, is comparable in its artificiality. It was observed earlier in this symposium that statutory reserves are really a conservative idealized cash flow model. We still need a model of an insurance company's reserve pattern to arrive at cash values and, hence, surrender benefits. But we have reduced the impact of the reserve problem on our analysis.

Up to this point, we have been focusing on traditional life products for which the Annual Statement was designed. The recent proliferation of nontraditional products has increasingly complicated matters. That has forced us to look to nontraditional sources for such vital input as sales, crediting rates and so on. A

good example for us to follow is from another line of business. Group medical and long-term disability coverages are combined in the Annual Statement. There really is no sense in that combination, but if we can obtain an indication of the premiums for each type of business, we are off to a good start.

The asset side of the balance sheet has not been the subject of as much modeling work by individuals at my firm. Like others, we had always been content with projecting a net investment return and leaving it at that. But the cash flow approach demanded that we pay more attention to the assets of the company. It was here that the going got tough. As a matter of fact, we still are not content with our current approach to handling a large part of many companies' fixed income portfolios, namely mortgages, although we continue to work at it.

We have had some success on the bond side, however. Fortunately, the Annual Statement does include a summary of bonds by general category and by broadly defined years to maturity. That was at least a place to start.

To simplify greatly, we use the distribution by maturity for a number of past years. Against this we apply an initial estimate of a yield structure on the existing portfolio by term to maturity. We compare the resulting expected total investment income against the actual for the first year. We then age the modeled portfolio through the base-line period and calculate the increases in each year to maturity. These increases are then applied to an idealized prevailing yield curve for new investments that year. We then once again check the actual against the modeled results.

The end goal is to get a set of yields by maturity that make sense. Conceptually, it is similar to the work involved in fitting lapse rates to the in-force business but with many more variables. With practice one gets better, but the process still is not as smooth as we would like.

This process has its shortcomings; for example, it does not address the issue of calls and other options. It also breaks down if the portfolio is being heavily traded. But we believe that it has proved to be a valuable start. An alternative is to go into the various parts of the Annual Statement Schedule D and use brute force to get things started.

As I mentioned earlier, we are now trying to develop a more suitable approach for mortgages. Not only are we working with very limited data, which someone described as scraps of paper glued to Schedule B, but we also are dealing with an investment vehicle whose characteristics have changed. Ten years ago, when things were simpler, we had success in modeling mortgages on an aggregate basis, but not now. We are open to suggestions.

Financial reporting systems often work against you. I would next like to address one of the major hurdles in our consulting work. The lack of uniform financial reporting procedures for Annual Statements often presents us with data that we cannot adequately analyze. That should come as no surprise and the situation is getting worse, not better. More and better information is due to the outside world. But that is beyond the scope of what I am addressing today.

Often, but not always, after the process has begun, we are able to talk to people in the company undergoing valuation to get clarification of the items or areas we

do not understand. It is then that we get a glimpse of the linkage between financial management and financial reporting within many companies. What we find is revealing, and I would like to make a slight digression on that subject.

Financial performance measurement and management systems in many companies have not been designed with current valuation considerations in mind. When I speak of financial performance measurement and management systems, I am talking about more than those systems relied upon in developing the data necessary to do valuation work today. All actuaries know what problems there can be in today's environment working with yesterday's systems and the type of numbers that were considered to be adequate when those systems were originally implemented.

What I am talking about is the framework in which the financial performance of each company is measured and reported. It should come as no surprise that the short-term measures of financial performance may indicate courses of action that will eventually limit the range of alternatives available to the company, and hence, the valuation actuary. In fact, in their current form these systems may very well hinder the realization of the most appropriate course of action once a valuation concern is identified.

As one example, I wish to discuss a situation I recently encountered. Because this example involves a corporate account and, thus, perhaps the ultimate level of stockholder dividends, it had a bearing on my valuation of the company. But it told me much more than that.

Each line of business in this company faces the normal pressure for current reported profits. At the same time, each line has the latitude, the company believes, to position itself for future profitability through short-term tradeoffs.

But how much latitude does a line really have? For, you see, there is also a corporate account for capital and surplus. At the end of each quarter, the profits for each line of business, plus realized capital gains and losses, are closed into the corporate account.

So far, so good. But during the past year with the decline in interest rates, the managers of one line saw a chance to sell some of the long-term bonds in their portfolio. The investment people assured them that through appropriate reinvestment this could be accomplished without sacrificing the future profitability or competitiveness of the line. Furthermore, it could bring the asset/liability structure of the line into much better balance.

What they had overlooked was the fact that on the internal management financial reports for that particular company, the realized capital gains would go to the corporate account. The line of business would not receive the benefit of the future investment income on all the sale proceeds. The line's future apparent profitability had been reduced and the increased amount of the corporate account would be entered into my considerations of future stockholder dividends, given my interpretation of the company's erratic dividend policy. I know that not all companies would be in this confused position, but having seen one, I am more cautious in looking at others.

Don't worry, it's reinsured! In analyzing the financial soundness of insurance companies, we at TPF&C have been paying more and more attention to reinsurance. I am sure that all of us here can name company failures where the ceding company had performed its reserve valuation and felt secure, only to find that the reinsurer was no longer viable. The reserve credits vanished and, hence, so did the ceding company. With the ever-growing number of companies in the reinsurance arena, we feel our extra attention is warranted.

Unfortunately, with the information at our disposal, we cannot always tell the balance between form and substance in the reinsurance arrangements in place. There are always questions about exactly what is reinsured and how it is reinsured. At this point in the development of our process, we have to fall back onto the materiality of reinsurance to the company undergoing valuation. If the company is heavily reliant on reinsurance and if much of the reinsurance is with a single carrier, we would seriously consider doing a valuation of the reinsurer. Thus, in the final analysis, to an outside observer the financial soundness of the ceding company may be no greater than that of its reinsurers. It seems like common sense to us, but that is not as commonly appreciated as we would like it to be.

When we then look at the reinsurer, we try to look at the whole company, which can be difficult. But we try to look at all aspects. We usually look at the C-2 risk, but one interesting case involved the C-3 risk and the estimated asset duration of an insurer and its principal reinsurer. Here we were dealing with a true coinsurance treaty. Working from publicly available data — fortunately both

companies, when we looked at them, were primarily invested in bonds — we estimated asset durations for the two companies as being:

ceding company:	6.5 years
assuming company:	1.6 years.

Because we were looking for something else, we did not attempt to estimate the duration of the liabilities. Furthermore, given the circumstances, I would have been more concerned had the duration relationship been reversed. I believe my concern is simply explained, however. Both companies were dealing with essentially the same major product. And yet, they both had arrived at sharply different balance sheets. The actuaries from both companies may have taken comfort in the duration of the assets backing their shares of the liabilities. I wonder, however, which of the actuaries was right. Perhaps they were lucky and in combination were correct!

Investment strategy has two sides. As I mentioned earlier when we were modeling the bond portfolio, we were also trying to glean some information, again from the outside, about how the insurance company was handling its new investments and managing its portfolio. In general we were trying to understand its investment policies and strategies. We knew that our techniques had, of necessity, many assumptions underlying them. But we had to start somewhere.

To test our methodology, we focused on one company that had shared its general investment strategy with us. In particular, we focused on a part of its investment strategy that stated the aim for a duration of about four years on the new investments during the year. Company personnel had begun to study the related liability structure and felt that this duration was appropriate. However,

they had not calculated the duration of the portfolio. They were still looking at mean maturities. When we estimated the duration of the bond portfolio, again using Annual Statement data, at the end of the year, we found the following:

- o Estimated duration of the beginning of the year = 4.0 years
- o Stated investment policy = 4.0 years
- o Estimated duration at the end of the year = 4.8 years.

The stated investment policy centered on a duration approximately equal to the initial portfolio, and one year had elapsed, yet the overall duration went up.

We then talked to people at the company and asked if the company had stayed within its stated investment guidelines. The answer was a qualified "Yes." The lengthening of the portfolio that we had noticed was also confirmed. Then what had happened? Well, during the year the company had sold part of the bond portfolio to raise cash to meet prior commitments and it had sold off the short end of the portfolio. Furthermore, those commitments appeared to have been for longer maturities. This had not been considered in the original work.

The moral of the story is this: You may state your investment policy for new purchases as being one thing, but the final results may indicate something different. The investment strategy should address total portfolio management, not just purchases. We are concerned with the total picture as it moves through time and not single actions taken one at a time.

As an aside, we have done some preliminary work on a dynamic asset model containing different investment strategies based on assumed yield curves. This

approach is different from locking in a specific investment strategy, and completion of this model should help us further explore the problem.

The stockholder has to get paid, too. I have one comment on the subject of stockholder dividends. When looking at the anticipated cash flow of a company under analysis, we consultants, like the in-house valuation actuary, must consider stockholder dividends. The valuation actuary can rely on a statement from management; we have to rely on what we see to have happened in the past. Often we can see a pattern in the historical pay-out of the company, either in the pay-out ratio or in absolute dollars paid out, and would feel comfortable extending that pattern into the future.

However, we also have encountered two patterns that cause us to pause. First, there is a pattern of repetition of what would normally be called extraordinary dividends. Sometimes these are shown explicitly; often they are not. When they are not shown explicitly, they can result in the second pattern in question, namely pay-out ratios in excess of 100 percent.

The following data are drawn from a company we were recently asked to give an opinion on.

<u>Year</u>	<u>Pay-Out Ratio</u>	<u>Stockholder Dividends</u>
1981	74%	\$11 million
1982	102	13
1983	37	5
1984	103	17

The erratic pattern in absolute dollars of stockholder dividends and pay-out ratio created a difficult problem in determining a future pattern to be used. Another example is one of steadily increasing pay-out ratios going past the 100 percent level.

In our experience the more variable dividend pay outs, in absolute dollar amounts, are frequently found in holding company structures. Where there is a balance of other major contributors of earnings in the related family, we are likely to temper our conclusions about future dividend pay outs from the life company. However, that is not the case in the example above. We are left with the question: Who needs the money and why? Management of the company may say that is beyond our area of questioning. However, if a life insurance company is to be turned into a cash cow, we want to uncover that as quickly as we can. It may have major implications for the future of the company.

One other comment about the holding company environment — we consultants look at the financial solidity of individual companies just like valuation actuaries do. But, you'd be surprised at how often the management of a holding company tries to get credit for additional solidity of a life company based on other entities.

In conclusion, a growing number of people outside insurance companies are looking at issues very similar to those this group is addressing. These outside people have come to realize that they cannot rely completely on the current published financial statements, in particular, Annual Statements, to give them a complete picture of the financial solidity of life insurance companies, nor can

they rely on published ratings of insurance companies that are based on no more than a paraphrasing of the companies' financial statements.

Without further assurances from insurance company managers and valuation actuaries that financial management is based on a thorough analysis of the company and does not rely merely on stated mortality tables, interest rates, and so on, there will be a growing demand for more raw information to work with. I know that I will be asking for it. And no matter what, I foresee a growing number of people doing what we are doing at TPF&C — looking over your shoulder and forming our own conclusions about the financial strength of your companies.

At least part of the outside world is now focusing on the projected cash flow position of insurance companies. Companies have promised the public a cash flow in the future and the public is beginning to ask: "Where is it coming from?" Here I am talking about long-term cash flow, but inadequate current cash flow has proven to be the downfall of insurance companies in the past. But, people will say, those were special instances. Perhaps. But, I ask you to consider what happens if the public loses confidence in an insurance company for any reason. That lack of confidence could quickly be translated into a drastic reduction in current cash flow, thus creating a self-fulfilling prophesy.

We on the outside often find that when we cannot reconcile the financial statements of an insurance company with what the managers are saying, it is because of an incomplete linkage between financial management and financial

reporting systems. When the financial reporting systems win out, we on the outside go away with a strong, and often negative, opinion that colors our valuation of the company.

Finally, those outside the insurance industry have become sensitized to the implications of reinsurance. If substantial reinsurance is in place, we will track down the chain looking for the weakest link. I would suggest that your reliance on reserve credits for reinsurance should be based on similar considerations. Do you know your reinsurers' valuation actuaries?

I would like to close with a comment and a question. I feel sometimes as if I am trying to get a feel for a C-4 risk, which I call the capabilities or incapacabilities of company management. We consultants look at the whole picture of how the company is run, financially.

And finally the question: If we actuaries cannot communicate what the valuation actuary is doing, have we really improved the public's perception of the financial strength of life insurance companies, or will the public think that we have replaced one set of arbitrary procedures by another?