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IMPACT OF LOWER INTEREST RATES

Moderator: KLAUS O. SHIGLEY
Panelists: JUDITH MARKLAND*
MARK A. TULLIS
MARC G. VERRIER
Recorder: KLAUS O. SHIGLEY

- Are lower interest rates here to stay?
- What are the product development implications?
- What are the market share implications?
- Are we recognizing the disintermediation risk?

MR. KLAUS O. SHIGLEY: Our topic is probably one of the more relevant ones for this meeting. We decided to split this presentation into three themes: (1) an economic perspective, (2) a marketing perspective, and (3) a traditional actuarial perspective.

Our first speaker is Judy Markland. Judy has a bachelor's degree from Middlebury College and a master's from Harvard University. She is a former chief economist at the John Hancock and a former chair of the National Association of Business Economists. In a more recent role, she was vice president in charge of group pension guaranty products at John Hancock. She has been the leading spokesperson for the industry in connection with 404(c) regulations. She's a frequent speaker on the economics of the insurance industry. She is currently president of her own consulting company, Landmark Strategies. Judy will examine the impact of low interest rates from an economic perspective. Judy will try to caution you that the low interest rates of today could hence be viewed on a broader scale and actually be high rates on their way to being a lot lower.

MS. JUDITH MARKLAND: Klaus talked me into speaking because he intrigued me with the topic. He wanted somebody to take the economic perspective and talk about what might happen if interest rates went higher. We'll also talk a little about product risks. I asked, "What happens if rates go lower?" Klaus said, "Oh they couldn't go lower." Now that's not reasonable; of course they could go lower. So my job is to set the scene and to try and put things in perspective.

How many of you have been in the job you're in now for more than five years or for more than ten years? I think we all know that the external environment influences the way people live, their social attitudes, and their attitudes about savings. So you know that people who grew up in a depression save a lot. People who grew up in the 1960s know that Vietnam influenced their behavior. If you grew up and started working in the 1980s, you were the materialistic bonfire of the vanities go-go type.

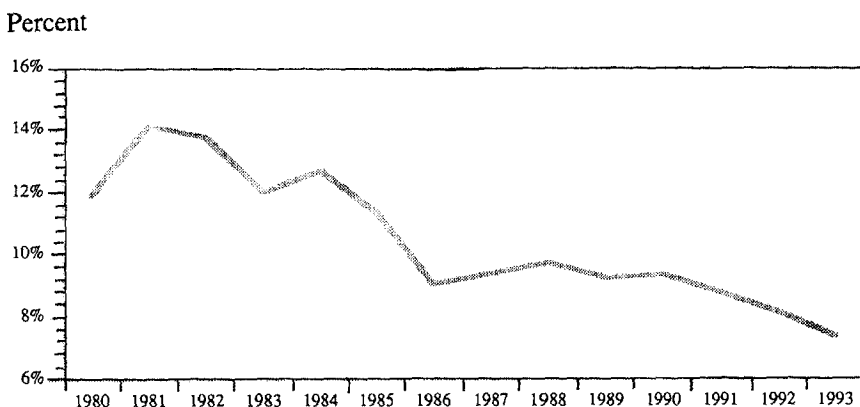
Not too many of us think about that type of thing and the work environment; this surprises me because in the work environment, the generations are shorter. The typical person changes jobs once every six years. And this group would seem to be

* Ms. Markland, not a member of the sponsoring organizations, is President of Landmark Strategies in Weston, Massachusetts.

an example of that. So our work perceptions are very much a function of what we know and what we've seen. Interest rates seem low to us now.

Corporate rates are down near 8% compared with the 14% or 15% rates of the early part of the decade (Chart 1).

CHART 1
Interest Rates Seem Low
Moody's Aaa Corporate Yields



Source: Moody's

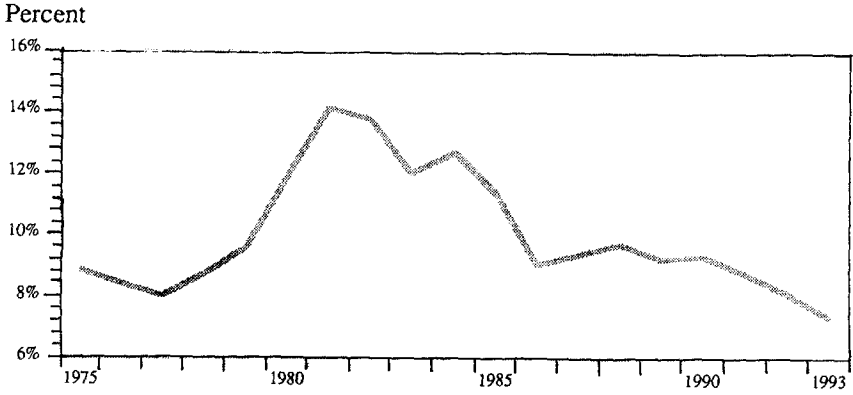
If you just add five years onto the data series, you start thinking about rate volatility instead of rate levels, and if you were around in the early 1980s, you know that rates bouncing around and rapid change was the big problem (Chart 2). Changes of that magnitude produce a whole different set of problems. And how long since you've heard anybody mention volatility? Rates have been basically stable for five years. We've stopped worrying about it.

But if you really look at history, and Chart 3 goes back to 1870, you can see that interest rates are really very high now. The last 20 years is the only time since 1870 when rates have been as high as they are currently. The straight line represents today's level of rates. So, if you look at a long perspective, rates are still unconscionably high. Maybe that's the kind of perspective to look at.

Chart 4 is as close as I get to fractals. Another way to look at rates is to show you a distribution of bond returns. This is from the Ibbotson data. The top lines are the years. The bottom lines are annual returns, ranging from -20 to 42. Obviously, there is a bias towards positive returns because of the coupon yield on the asset.

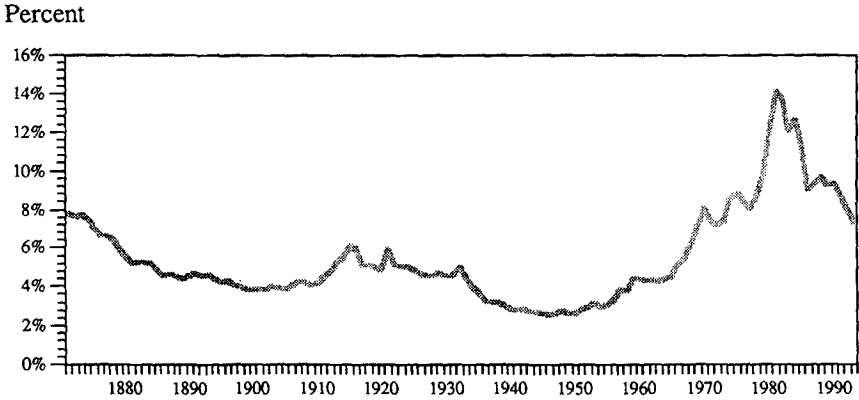
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CHART 2 Interest Rates Seem Volatile Moody's Aaa Corporate Yields



Source: Moody's

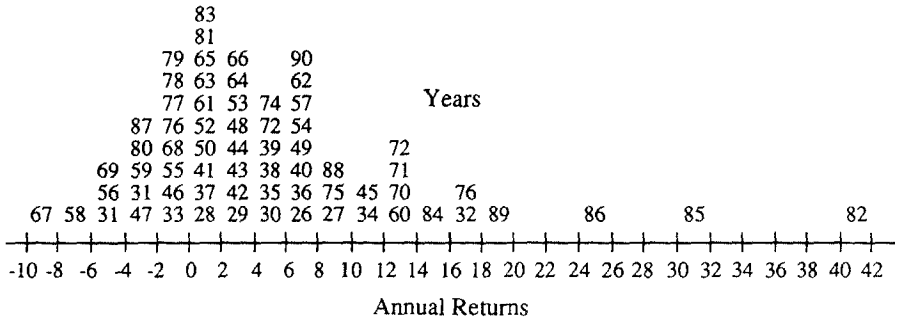
CHART 3 Interests Rates Seem High Moody's Aaa Corporate Yields



Source: Moody's

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CHART 4
Distribution of Long-Term Bond Returns
1926-90



Source: Data from Ibbotson Associates

The highlighted numbers in Chart 5 are the years since 1975. You notice that they're not exactly centered in the distribution, but there are very high positives and a more frequent percentage of negatives than is typical for the sample. Over a third of the negative bond return years occurred in the period since 1975 – an illustration of the high volatility and the fairly aberrant behavior we've seen over that period.

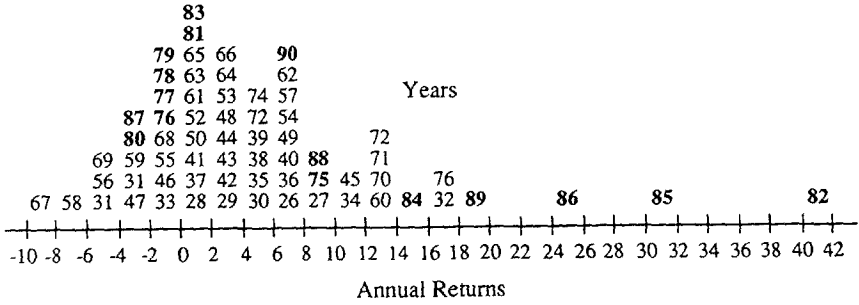
What happens if interest rates rise? You're more familiar with this because your corporations lived through this in the early 1980s. Rising interest rates cause portfolio rate products to be uncompetitive. You have problems of disintermediation and those are probably exacerbated by current investment policies.

One thing we're all aware of is that in a rapidly changing rate environment you tend to have problems with products' relative competitiveness depending upon whether they're funding via new money rates or portfolio rates. (See Chart 6.)

In my experience, people tend to forget that it's the yield that often drives the product's success. We've had six or seven years of portfolio rates looking good relative to new money rates. I've just used the BAA yield and taken 100 basis points off as a proxy for expenses. You could make your own adjustment for a deduction for expenses and profit. The bottom line is the portfolio yield for general accounts for the whole industry. So individual company returns will probably be different, but there's no doubt that for the last several years portfolio rates have looked good. People tend to forget that rates are, in fact, what draw product success.

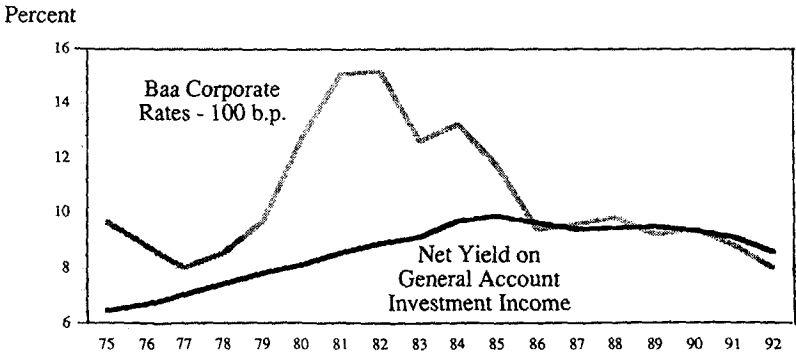
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CHART 5
Distribution of Long-Term Bond Returns
1926-90



Source: Data from Ibbotson Associates

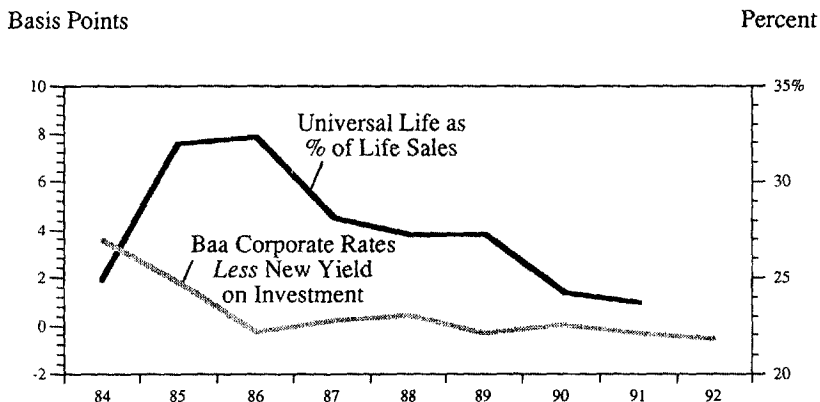
CHART 6
Portfolio Rates Versus Market Rates



Source: Moody's, ACLI

Universal life (UL) didn't exist until the early 1980s. (See Chart 7.) UL represented close to 35% of all life sales. Then proportion plummeted as new money spreads came down. It plummeted despite the fact that universal life portfolios started to look a lot more like general account portfolios than the one- or two-year rates they started out as initially.

CHART 7
Rate Differentials Drive Product Sales



Source: Moody's, ACLI

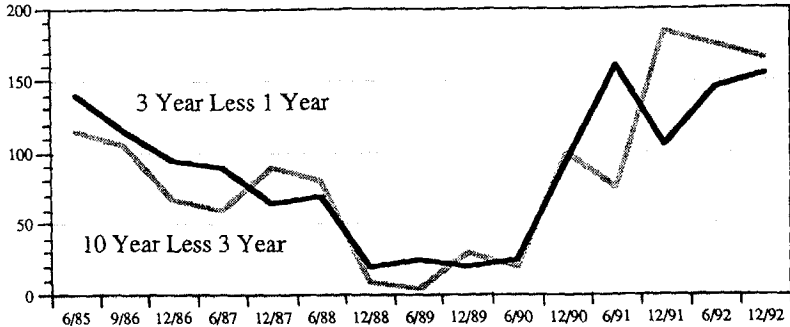
When I was the economist at John Hancock in the early 1980s people tried to tell me that it wasn't the interest rates on the product that drove universal life. It was the premium flexibility. Customers really liked that premium flexibility. That was what was so great about this new product; it was so simple, and it was so easy to understand. That was what drove this product. People in the guaranteed investment contract (GIC) world are trying to tell me that the growth of GIC pools is a drive for diversification. Customers really want that extra diversification they get from having 10-15 different life companies in a GIC pool. The fact that the yield is 100 basis points higher than a new GIC because it's a portfolio has nothing to do with the success of GIC pools at the moment. So don't forget the underlying attractiveness of the product.

My guess is that everybody's cheating a little bit on maturities; they are trying to soften the decline in the rates by going just a little bit further out the yield curve than they might want to for whatever investment makes sense for the product. They're doing that because yield curves are so steep now. Chart 8 shows the three-year rate, minus the one-year rate. It plots the ten-year rate minus the three-year rate. Over the last six or seven years the rate has gotten incredibly steep.

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CHART 8
Steep Yield Curves Promote Maturity Risk
Spreads on AA Financial Issues

Basis Points



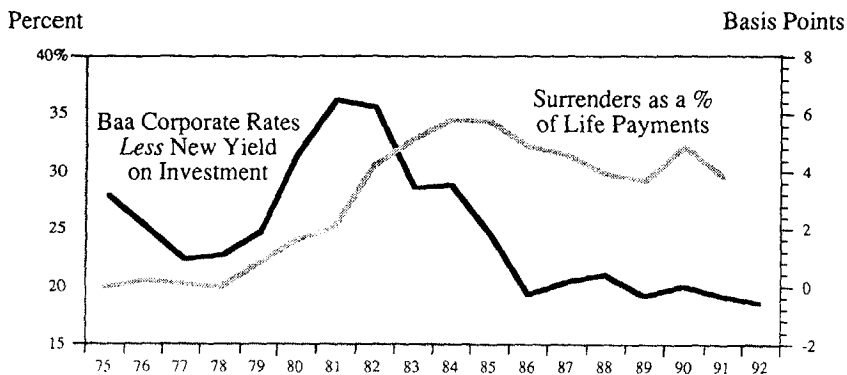
To the extent that you, your company, or your customers are going long, I know GIC customers are currently increasing the durations of their funds and there is much greater risk if rates spiral up, then you'll be further out of line with current new money rates. The portfolio will roll over less quickly, and you increase arbitrage risk.

Obviously rate differentials matter. The difference in interest rates as well as the level of rates create arbitrage opportunity (Chart 9). One line represents surrenders as a percentage of total life payments; another shows the BAA corporate rate less the general account yield again. You can see that when the money rates were hot, surrenders went from 20% to 35% of total life payments, including benefits, policy loans, etc. Now we've created an industry where surrenders come down less frequently.

I suspect that you're all currently underestimating disintermediation risk currently for two reasons. Cash flows have, by and large, been basically stable and it's very hard to estimate what this arbitrage risk might be. Those of us in the GIC world talk about disintermediation risk in terms of options. You're trying to guess what the exercise efficiency is. Well, how do you do that in a declining rate period? What can you use? There's no good data with which to measure risk.

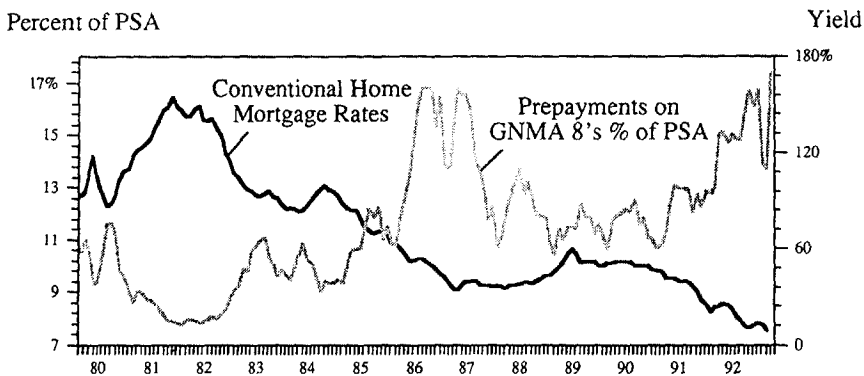
I submit that, in fact, there is a good way to measure risk. This is something that your firms probably should be looking at. A rate measure that works in both rising and falling rate environments is GNMA prepayment experience (or some sort of mortgage backed prepayment experience). It is a very good proxy for arbitrage behavior or disintermediation behavior. (See Chart 10.)

CHART 9
Rate Differentials Determine Arbitrage Opportunities



Source: ACLI

CHART 10
Mortgage Prepayment Experience
A Proxy for Arbitrage Behavior



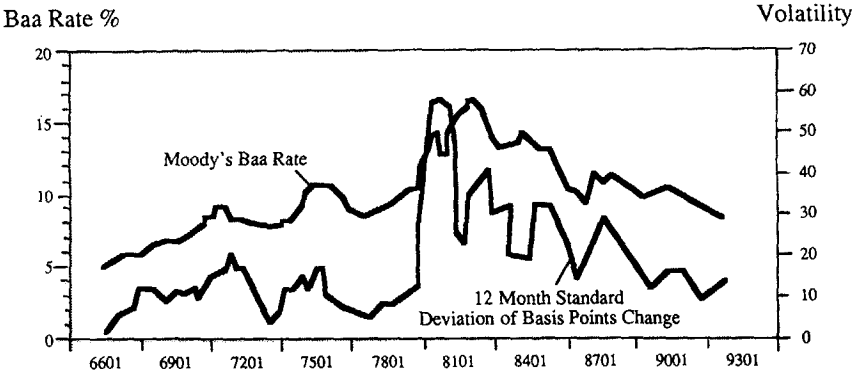
Source: Data from Federal Housing Finance Board, Salomon Brothers

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It's a broad-based sample that includes unsophisticated people. It has the inertia effects. It has some of the expense effects that are in many of the life products, because, in fact, it's expensive to refinance your house. You can use it to work with changes in interest in both directions. You can use it to measure exercise efficiency in terms of spreads as well as levels of rates. It's a very powerful series. I think your investment people could get this for you separately for financially sophisticated people and unsophisticated ones, because there are different kinds of pools related to different underlying demographics.

The relative price of the option itself is another reason you're probably currently underestimating the arbitrage risk. (See Chart 11.) One issue is what is the exercise efficiency? What is the risk whether people exercise their option or not? The other issue is what's the price of the option itself? We tend to use rate volatility. Most people and bond traders look only at current rate volatility and that's the way markets work. Many of us use the market as a proxy for determining the price of the options in our products. In fact, that's fine only as long as you're dealing with a short-time horizon and a perfect trading environment.

CHART 11
Are Arbitrage Options Underpriced?
Volatility Varies with Rate Levels



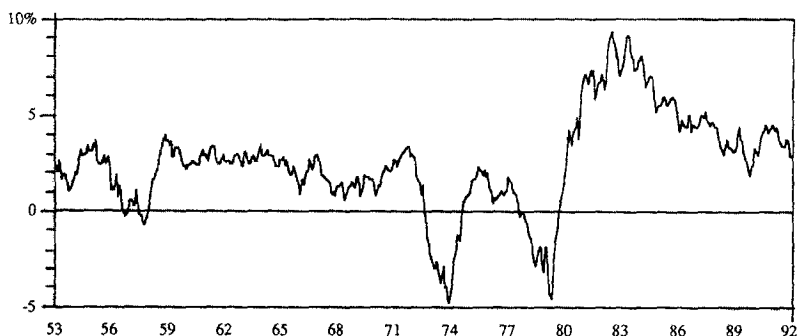
Source: Data from Moody's, Salomon Brothers

With life products and a longer time horizon, you worry about a steep change in rate levels and a discontinuity from the current period. Chart 11 shows that rate volatility declines with the level of interest rates. So if you are, in fact, trying to measure your risk in a higher rate environment and in a steeply rising rate environment, current rate volatility isn't the gauge for you. You want something that captures the volatility in that high-rate period. To do this I suggest you use a much longer history of volatility than probably your bond traders will think is appropriate.

Okay, that's what happens if rates rise steeply. What happens if they fall? Again I submit to you that you can make a good case that rates currently are very high. They may not seem that way to you, but, in fact, look at real interest rates in Chart 12.

This is what people pay after inflation. They're still very, very high in historical terms. This means that the cost of credit is high relative to the ability to pass it on. It's no accident that, even though the recession just started in the last couple of years, the 1980s were not a period of vigorous growth. And one reason they weren't vigorous was because credit was tight and it's cost was high.

CHART 12
Real Interest Rates Are High
Ten-Year Treasury Less % Change in CPI from a Year Ago



Sources: Federal Reserve Board, Bureau of Labor Statistics

So this is not a sustainable level of real rates from an economic point of view. If you add the number of layoffs, the excess capacity, or high employment, there's not a lot of pressure there to keep rates up. I know that there are a lot of Republicans who feel differently, but from the basic fundamentals, it's hard to see where the pressure is coming to push rates higher.

So what happens if rates fall? People haven't been thinking about falling rates as much as rising rates. The obvious concern is the pressure on minimum rate guarantees. Those minimums of 5-6% that looked so easy to achieve five years ago are a lot less easy to achieve now. One reason is that both asset losses and expenses are much higher now than they were in the 1960s and 1970s, when bond rates were last at this level, so the actual amount available to credit and pass on is a lot lower.

There are some other things though that I think people haven't thought about and they all push in the same fundamental direction. While I think the rising rate problems

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are by and large cyclical, the declining ones are much more structural and they all push in the same direction.

Financial institutions assume credit risk, diversify it and pass it on to people through savings products. Like volatility, credit spreads vary with the level of rates as well (Table 1). The data in Table 1 are taken from a paper by two people at Pimco. You can see that as rates decline credit spreads decline as well. So there's less yield to diversify and pass on to savings products.

TABLE 1
Credit Spreads Vary with Yield Levels

	Average BBB Utility Yield	BBB Yield – Average Ten-Year Treasury
55-59	4.21%	0.75%
60-64	4.79	0.76
65-69	6.22	0.95
70-74	8.75	1.97
75-79	10.04	1.91
80-84	15.18	2.76
85-89	10.92	2.09

Think about taxes. Life products work with tax savings from the inside buildup. It's a competitive advantage over banks and investment companies. The relative size of the tax saving shrinks as rates come down (Table 2). The table shows a high and a low marginal tax rate here. If rates drop from 12% to 4%, obviously the relative size of the tax savings is the same; it's still going to be whatever the tax rate is. But the absolute number of basis points shrinks a whole lot. Now some of you are using that tax saving as a shelter against other kinds of financial institutions, to support expenses that they don't have. Personalized distribution comes to mind. Unfortunately, you've got a whole lot less to do it with now. So, if you're not using the tax benefit of your product to support an extra expense that a bank or a mutual fund company doesn't have, you're golden. If you are, the extra expense must shrink.

TABLE 2
Low Rates Reduce Competitive Tax Advantages

Net Customer Yield	Tax Savings	
	@15%	@35%
12%	1.80%	4.20%
8	1.20	2.80
4	0.60	1.40

Another way to look at that whole issue is that you just can't have the same levels of expense and profit margins that you used to. Table 3 looks at a 150 basis point margin as a percentage of the gross investment yield. If you start at 12%, the margin is about 12.5% of the income. If you get to an 8% rate level, its 19%. If you drop to 4%, the margin is 38% of the gross yield. There's not much value left for the customer. So, in a declining rate environment, the institution has to take a

smaller piece of the pie if it wants to add value for the customer. There is downward pressure on profit, which should come down some because ROE hurdle rates don't need to be as high in a low rate environment, and also on expenses.

TABLE 3
Low Rates: Pressure to Lower Expense and Profit Margins

Interest Rate	150 Basis Points as % of Rate
12%	12.5%
8	18.8
4	37.5

Note that all of these things point in the same direction: less tax advantage, less credit spread, less room to hide expenses, and systematic structural pressure to cut expenses and add value in different ways.

Now what can you do about it? Well, I looked at the different ways you could increase yield. It all comes back to more risk. If you think about the Ibbotson-Sinquefeld approach to life, it decomposes yields into the risk-free rate; then it adds maturity risk by going to a long government bond. Then from that you can add credit risk – go from a long government bond to a long corporate. From that point, add equity risk. These are the investment risks, and the only way to increase yield. The average returns for each risk over the long-time span of 1926-90 was risk-free rate 3.7%, maturity risk 1.3%, credit risk 0.7% and equity risk 4.9%.

What happens? Well, you've got the extra risk-based capital costs now. They effectively cover credit risk and equity risk. My guess is the only risk that doesn't cost as much in risk-based capital or target surplus is mismatch risk or maturity risk. That's great as long as you're not worried about rising interest rates. That's where we started this interest rate discussion.

Here's a list of other things to worry about. Demographics are pushing products away from life insurance towards retirement products. Banks and investment companies are seeing their market shrink just as the life market is, and they're becoming more aggressive in all aspects. We all have tax risk, both on the asset side and the liability side.

Accounting changes. There's a session at this meeting on fair-value accounting: Valuing bonds at market value, liabilities at book value. That's obviously going to affect financial management and product design. The Securities and Exchange Commission is trying to register all separate accounts.

So there's a lot of change out there and lot of potential. And the smart guy is probably also going to be the lucky one.

MR. SHIGLEY: Our next speaker is Marc Verrier. Marc is a graduate of the University of Manitoba. He has over 15 years of experience in the insurance industry covering actuarial product management, marketing and product design. And while he was at ManuLife, he helped develop its pioneering second-to-die life insurance policy.

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Marc is a Fellow of the Society of Actuaries and the Canadian Institute of Actuaries. He's currently president of Genesis Development Company. The company brochure states that his company will bring innovative experience and an aggressive approach to product design, marketing distribution, and marketing management.

The focus of Marc's practice is product development, product marketing and distribution strategies for life and annuity products. I use the word focus with great care. About two years ago I was in a position to award a \$500,000 consulting contract which I was ready to steer in Marc's direction when he steered me to someone else because my project wasn't in his power alley. So, he really does come prepared to develop our theme from a marketing perspective: the impact of lower rates on distribution product marketing and corporate strategy.

MR. MARC G. VERRIER: Had I known then that it was a half a million bucks, I probably could come up with a different answer. I'd just like to add one thing to what Klaus said. Genesis also focuses on the U.S. market. My comments are aimed primarily at the U.S. market. I guess in true marketing fashion, I'm going to answer the question by asking two more questions. The first is, are interest rates in fact low? And second, can we take this one element, isolate it, and analyze it on it's own? Obviously you will wind up forming your own judgments on these points as a result of these discussions. So I will leave you to consider those questions. My primary objective is to encourage you to look at your company's strategies in a new light. See if they make sense given what's happening throughout our industry and the environment.

Our proposition, for lack of a better term, is that no one in this room knows the future of interest rates. I think if you did, you wouldn't be here. So we go on the basis that interest in the future, the trend of future interest rates is unknown. If you will be affected by the movement in interest rates and the direction of interest rates, then you need to hedge that. If you are going to hedge it independent of your particular position in your organization, a stand-alone product marketing or distribution strategy, almost by definition will fail. Finally, any hedge and its ultimate success or potential for success will be significantly impacted by the extent to which it is designed and implemented at the corporate level.

When presenting these points I will isolate the trends that we see in our business, the impact that those trends have had, and the strategic options that are or are not available to companies in this kind of a marketplace.

Obviously interest rates have gone down for ten years. Judy has done a very good job of demonstrating that interest rates appear low relative to the last ten years, but, in fact, can be perceived to be very high. Furthermore, I think, she's made a good point about predicting interest rates and the mentality that exists in certain companies. We strongly want interest rates to be low. We want inflation to have disappeared. And we don't want out expectations to cloud what we decide to do. The stock market is a most obvious example. It has been very strong, it has performed very well. We haven't had any shocks since 1987 or 1989. It doesn't mean that we're not going to see anymore shocks. We know that we will get them. We're looking at demographic shifts as well. Of all these elements, only one should be considered

irreversible: the demographic shifts that are occurring now. All others are reversible, or by their nature unpredictable.

If you look at the factors impacting our industry that are indigenous to our industry, the one that is probably ignored the most, but may be most important in a rising interest rate environment or certain other environments moving forward, is the structural fragmentation of the industry. It might be called the disintegration of the industry. There is a company operating in the annuity market that has become, in the course of a couple of years, one of the largest five or six annuity providers. This is done with a staff of three people at the home office.

This company has contracted for the different components of an insurance company: sales, marketing, product design, research, administration, systems, investment management, and reinsurance. In all cases, they run significant fliers. In all my years in the business, I think that is one of the most significant trends that we must look at.

Rehabilitation and other industry factors include insolvencies. They have had and will have a significant impact on our business. There's also the disintermediation of the banks with the banks as very willing partners in this process. Banks have increased capital standards, and a growing acceptance of fee income as a way to do business.

Consequently, you're seeing banks and stockbrokers acting as new distributors. Obviously, the regulatory environment has been different for a number of years. But they are becoming much more visible in our business now. There is another factor that has existed a long time but we need to recognize it as being important. That is the maturity of the life insurance business. The reality is that the life insurance business is a mature business. We see certain winners emerging almost by definition, and we are going to see losers emerging. This is not one of these happy win-win situations. I think that where there are winners there will be substantial losers as well.

Let's look at the impact on the industry. Of the various factors that we've identified, an obvious impact has been on the growth of the annuity business. That is primarily due to environmental factors. Demographic shifts in the growth of the variable business are very significant. It has not been an easy shift. And it continues to require a lot of effort. But the underlying, driving element has been both dropping interest rates and the strength of the stock market.

An environmental element is the demographic shift with the growth of banks and stockbrokers as distributors of our products. It's like doing preconsumer orientation of the annuity products to date. This issue is strongly related to the interest rate trends. I would like to relate the illustration problem to that of an iceberg. When we had interest rates going up a lot of sins could be covered. But now with interest rates coming down, all of our sins are, in fact, being uncovered. Regardless of the cause or the solution, the reality is that we have significant illustration problems in our industry. We continue to have very complex products. The mechanism that we have adapted, that we have developed in order to communicate those products to our customer, whether distributor customers or consumers, now have significant credibility problems. Those are issues that we have to look at.

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Another issue that Judy has touched upon is a reduced value of the tax advantages and the pressure on margins that has occurred as a result of low interest rates. I suspect that Judy's analysis of the impact of lower interest rates on the value of the tax advantage could be understated. Think of our expense factors and death benefit costs and guarantees, and everything internal to our products. If you say that has a fixed cost of 3%, then as interest rates move from 12% down to 7% you could look at the value of the tax advantages going from 3.6% of assets, down to 1.6% of assets. In other words, margins reduce by more than half in that kind of an interest rate shift. It is hard to predict exactly what that means for us, but it is very significant.

At the same time, the cost of providing basic insurance benefits, whether it be life insurance or income, has increased substantially. Depending on the distribution organization and the marketing approach, that can have a very significant impact on the salability of the product and the sales of product.

We have looked at the trends affecting our business, what the impact has been in our business. Now let's look forward and to see how to counter what is happening or what could happen. There are basically two scenarios. First, let's assume that interest rates stay flat or continue to decline. In other words, more of the same.

Now, in that kind of an environment our best bet is to look at the strategies that have worked in the last few years. Number one on my list would be portfolio products. Despite the fact that a portfolio product's illustration may be questionable from a theoretical standpoint, there is no question that portfolio products have picked up substantially at the expense of new money products.

The strategy of companies shifting to variable products has been very successful in some cases, and in other cases very unsuccessful. One of my clients has been in the variable business for seven years, and finally the product has started to move. They say after seven years of hard work they finally have an overnight success, which I think tells us about this business. You cannot develop variable products and slough them into your existing marketing and distribution systems. You must not assume that they will simply adapt from one product to the other. Companies have learned at great expense that you cannot do that.

Companies that are successful from a sales and a financial standpoint have been aggressive in pricing their products initially and in repricing their products. That has been necessary in order to get business on the books and to maintain the profitability of the business.

Finally, is the need to increase focus on guarantees and on the benefit side of the equation and to reduce the focus on price is most important. Clearly what we've seen is organizations whose primary emphasis has been on competitive price. They have suffered significantly, because of their emphasis. If you live by the sword, you die by the sword. On the other hand, companies that have shifted to a sale of benefits and of guarantees have made price a secondary consideration.

If you look at the sales process, to the extent that you get the customer to focus on the benefits and to buy the benefits, then we all know that the price becomes

secondary and consumers will accept the higher price provided that price is competitive in the marketplace. All of these strategies have been important to carriers that have succeeded in the last few years. To the extent that we expect interest rates to continue low or go down, presumably similar strategies will work in the future.

If interest rate trends reverse, then what do we do? I'm going to take off my marketing hat for a moment and ask the question, what are we trying to hedge against? First is declining sales. That is the perspective of a manufacturing plant. We are used to issuing 20,000 policies a year, and we have a staff that is able to do that. That is, in fact, a fixed cost. Declining sales can lead to significant losses within the manufacturing plant.

Disintermediation, on the other hand, relates primarily to your in-force business. If you have a significant block of in-force business, is your primary concern one of protecting that in-force block?

You might say the largest asset that we have are what is of most value is our distribution franchise. We have a distribution relationship that has to be maintained at all cost. If you'll look at those three different elements, with interest rates moving fairly slowly, then you can afford to have three front burners. On the other hand, I would suggest that if interest rates start to move very quickly, you will have to choose between those three. Is your primary interest the manufacturing plant, the in-force business or new business? To the extent that you choose one at the expense of the others that will impact your strategies.

Ultimately whichever strategy you choose, you must decide how you hedge against reduced profits? Or if your pricing systems work this way, then how do you protect against reduced contribution to profit and overhead. But before you can determine what your strategies will be, you have to look at these questions from a corporate perspective.

Here are some strategies that we suggest that you do not pursue. It's one thing to design strategies on the basis that you believe interest rates will stay level or continue to decline. It is another thing to design strategies with the thought that interest rates will not increase.

So it is easiest but also potentially damaging to assume that interest rates will stay flat. Similarly, given the fragmentation of the industry, don't assume that all carriers are in the same boat, and that all response times of your competitors will be the same as your response time.

New entrants will be coming into our business when there are opportunities. And a sacred cow that I don't mind taking a shot at is policyholder equity. I think that policyholder equity is very important. In all successful companies policyholder equity changes over time. It gets modified over time to take into account what is happening in the business. It reflects multiple objectives. One is to provide the lowest possible cost. Another is to provide the maximum security. But a third is to ensure the viability of the organization overall, which is necessary in order to provide the first two objectives.

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Similarly, it is a mistake to develop a product strategy to take into account these trends. The variable analogy is probably best. Companies that develop variable products as replacements for their fixed products, given similar marketing methods and identical distribution strategies, generally speaking, don't work because you cannot fix the product strategy alone. Similarly, you can't work with only a marketing strategy. Marketing and distribution have to work together.

What alternative strategies do we think will work? Number one is to focus on noninterest-rate-sensitive markets. Many companies have not looked at this strategy. Number two, try to lock in your distribution system. Don't kid yourself. The only way to get control of your distribution system is, in fact, to own it. Beyond that everything is a matter of degree. We get into a very gray area. It is very dangerous for a carrier to assume because it has strong relationships with the management of a distribution company. Don't assume that you own that distribution company and that it would never run counter to yours. They are in a different business than you will be.

Again, let's go back to the three key elements that we discussed before. One was the manufacturing plant versus the in-force business versus new business. If you look at it from that perspective, you'll see that the different parties to the equation will have very different interests.

If you can't beat them, join them. We're seeing some companies saying that they cannot run a manufacturing plant issuing 10,000-20,000 policies a year. On the other hand, we don't want to risk our capital to get that number up to 50,000-100,000. So, they are looking at options like setting up their administrative operations as a third party administrator (TPA) or hiring a TPA to run elements of their business for them.

What if a small- to medium-sized company looks at designing and implementing a strategy to hedge against rising interest rates? What is the dollar cost of doing that combined with the lost focus and the impact of that on the organization? That company might find it is better to execute a financial hedge. In other words, if you know that the impact of a 200 basis point increase in interest rates will be X, you can simply go out and buy an option to cover that cost. Execute a hedge at a corporate level.

Probably the most typical response or the most typical strategy that we see is to build a diversified product portfolio. That can work. But again, the danger is that you build a product portfolio and implement a product strategy independent of your marketing and distribution strategies.

The most valuable thing to an insurance company is the relationships. Focusing on creating stronger links to customers can become very important. I don't mean distribution customers and agent customers, as many companies have defined them now, but also customers at the consumer level.

So let me go back to the opening proposition. Number one, we don't know the future course of interest rates. Number two, what do you need to do to develop a strategy? Quantify the business impact of the interest rate changes that could

conceivably happen. Number three, avoid stand-alone product, marketing or distribution strategies. And number four, look at the issue from the corporate standpoint and design your hedge strategy accordingly.

MR. SHIGLEY: Our next speaker is Mark Tullis. Mark is a graduate of the University of North Carolina. He spent over 15 years in the insurance industry. For the past ten years he's been with Tillinghast in the Atlanta office. He is currently a principal with Tillinghast. His area of expertise is life insurance product development, life insurance financial projections, and statutory and GAAP valuation issues for both life and annuities. Mark is a frequent speaker at industry meetings and has published several articles. He is a coauthor of the book *Valuation of Life Insurance Liabilities*. He also is a member of the Society's Product Development Section Council.

Mark will develop our theme from the traditional actuarial perspective. We saved the best for last. You've all been waiting for is some serious actuarial talk: impact of low interest rates on interest maintenance reserves (IMRs), asset valuation reserves (AVRs), risk-based capital (RBC), applicable federal interest rate (AFIR), summary plan descriptions (SPDs), etc.

MR. MARK A. TULLIS: I'm not going to try to predict the future and say that rates are going to go up or down. I'm going to look at the effect of the current environment on a company's in-force business and look at the interaction of the current environment with tax. I'm going to approach it a little differently than the previous two speakers. I will consider the effect of the current environment on merger and acquisition activity, and the interaction of the current environment with recent regulatory changes.

First, is the effect on in-force business. Is the current environment good or bad news? It depends on the type of in-force business that you have and the type of investments that you've made. But first let's look at the good news.

The good news is that most companies should have increased spreads for some of their in-force interest-sensitive products, because credited rates have been falling faster than earned rates. Over the past few years, this has given companies an opportunity to dress up their balance sheet through increased value of bonds with the caveat that, of course, they have to pay tax on any gains. As many companies found out last year, with the IMR, you can no longer book the market value through to surplus upon the sale of your bond, or when your bonds are called.

Looking at this as the good news, we can say who the winners have been this time. The winners have been companies with products that have either short-term or no credited rate guarantees, etc., particularly those companies who have been quick to ratchet down credited rates to new money levels and the companies who have invested long and in fixed-income instruments, particularly in noncallables.

On the other hand, the bad news is that it's been harder to cover existing credited rate guarantees for some products. We've been hit with increased calls and lower reinvestment rates. Now we can say who the losers have been this time. Namely, companies selling products with longer-term rate guarantees such as long-term guaranteed single premium deferred annuities (SPDAs) with five-year interest

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guarantees, payout annuities, or fully guaranteed products, such as noncash-value whole life in Canada.

These companies have been losers particularly if the assets have not been well matched or too short, or if the companies have been heavily in callable instruments.

As Marc said earlier, management's jobs are balancing the liability portfolio risk, minimizing risks, taking into account the marketing plan, etc. Some of these products have been losers, but hopefully most of you all work for companies where there's been a mix of winners and losers over the past few years.

Let's look first at single premium deferred annuities. The typical SPDA portfolio should have increased spreads and the value of the in-force business should have increased. There are two problems. First, if you have business with long-term initial rate guarantees such as a lot of five-year guaranteed stuff, that could create some problems.

Second, a number of companies have SPDA portfolios that have reached the point where the surrender charge is rolled off. They've got "naked" money lying around. This is getting to be a problem with some companies; however, most in-force annuity blocks should have fared well over the past few years.

I guess I would go out on a limb and say if you're selling fixed, traditional SPDAs without long-term rate guarantees, and you haven't been making a lot of money on your in-force block over the past few years, you're probably never going to make a lot of money.

Let's look now at traditional Ma and Pa and zero cash-value companies or products. If you've been selling this, you've been saddled with a longer, lower ongoing investment return and probably a decrease in the value of your in-force business. With these contracts, you have no possibility of decreasing the current rate that you pass through to the policyholder since everything is locked in at issue unless your assets are perfectly matched, which of course is impossible because these products have ongoing premiums, you're going to make less money than you have priced for.

Let's move on to payout annuities which are structured settlements, terminal funded annuities, immediate annuities, etc. These products have been hit with a large reinvestment risk. Unless you're perfectly matched at issue, you're going to find that you're earning less money than you originally priced for. With a lot of these products, it's impossible to be perfectly matched because the liabilities are just so long and you can't find noncallable assets to cover the liabilities.

The possible reserve restatement point is that in extreme cases, the asset yield may be low enough that the statutory reserve rate basically has to be restated. For example, for 1985 issues, if you sold payout annuities, you'd be using a statutory reserve rate of 11%. If you've been hit with a lot of calls or maybe invested too short or something like that, you may find that you can't support your statutory reserve interest rate any longer. You're in a position where you probably should restate the statutory rate.

We've observed that this is a big problem when blocks of business change hands. A lot of times it doesn't get addressed if it's just an in-force block that's sitting there and the actuary forgets what the reserve rate is. However, if you go out and buy a block of these payout annuities, you're forced to pay some attention to it. We've noticed a number of situations where the reserve rate ended up having to be restated and it has a big downward effect on the value of the block.

Judy talked earlier about GICs. The big thing with GICs is how well-matched your portfolio is and how good a handle you have on it. For corporate-owned life insurance (COLI), the current rate environment should have very little impact. The big drivers are tax related. Of course, the profitability of the loan value should not be impacted at all by changes in the interest environment.

If you have blocks of vanishing or nonguaranteed premium products, you're probably in a position where you have to increase the vanish period. On the nonguaranteed premium products, you probably have to increase the premiums.

My observations would be that vanish years have gone way up on the vanishing premium products. Of course, this could lead to wonderful things like policyholder dissatisfaction, lapses, etc. I would guess that the interest rates probably haven't dropped as fast as the market. Also, regarding the vanishing premium product, despite the fact that interest rates haven't come down fast enough, companies should be enjoying excess spreads. It's basically the same argument as applies to the annuities. You get a chunk of assets and bring the rates down. You should be getting excess spreads currently.

Finally, looking at universal life and participating-type products, companies have reduced the credited and the dividend interest rates for both UL and par business. I would ask the question whether they've been reduced quickly enough? It depends upon whether you look at the interest rate as a portfolio type rate or as a new money type rate, particularly for UL. I would contend there has been a movement toward looking at UL-type credited rates more as a portfolio rate.

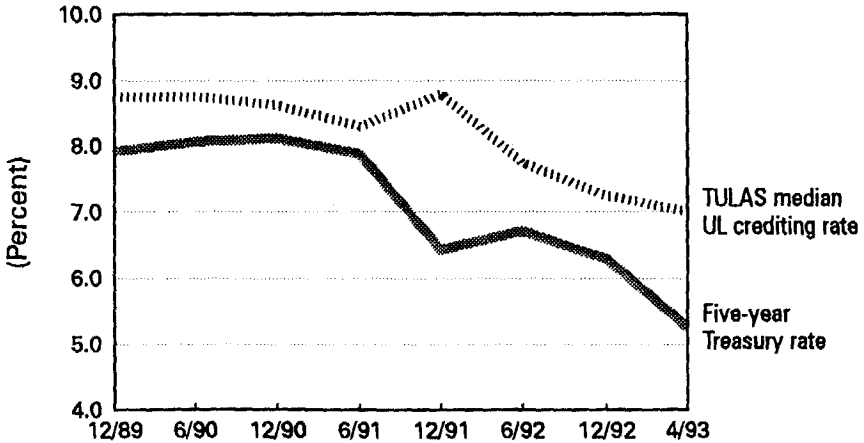
We do a survey of UL products and crediting rate. (See Chart 13.) I've tracked it against five-year Treasury rates. First, you'll note the spread has widened. Basically UL credited rates have not been as reactive as say, new money Treasury or even SPDA credited rates, which tend to track new money rates very closely. I would also argue that theoretically, if you were looking at it purely on a new money rate, the spread should have narrowed relative to Treasuries. As Judy pointed out, you have only so much money to skim off the top. If you don't squeeze the rate down, you're not going to make your profit margin.

The fact that the spread has increased tells me either the companies haven't been aggressive, they've been keeping the rates up due to market considerations, or they're looking at this more on a portfolio basis.

If you have in-force blocks of UL, the effect would be to limit the earnings from the in-force blocks. This makes it extremely difficult for new entrants or companies that have not switched over to a portfolio basis.

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CHART 13
Universal Life Crediting Rate Versus Five-Year Treasury Rate



Let's look at SPDAs a little more closely. Let's look at a standard SPDA that was issued three years ago with a one-year interest guarantee. This is not a contract with an extended five-year guarantee at issue. It has a one-year rolling interest guarantee with a new money crediting rate. We're going to look at what actually happens to profitability based on a couple of investment strategies.

If you had priced it originally based on new money rates at January 1, 1990, Table 5 shows the type of profit you anticipated and what actually happened if you rerun the numbers as of the issue date and slot in the actual interest rate history that has happened since January 1, 1990 through the end of last year, then assume that rates remain level throughout the remainder of the contract life. Two investment strategies are shown.

Basically what the numbers show, as discussed previously, is that the profitability for this type of product is increased in the current environment. The reason is we're crediting on a new money rate. As Judy pointed out, most companies tend to go a bit long on their assets relative to their liabilities. Basically, everybody won the bet.

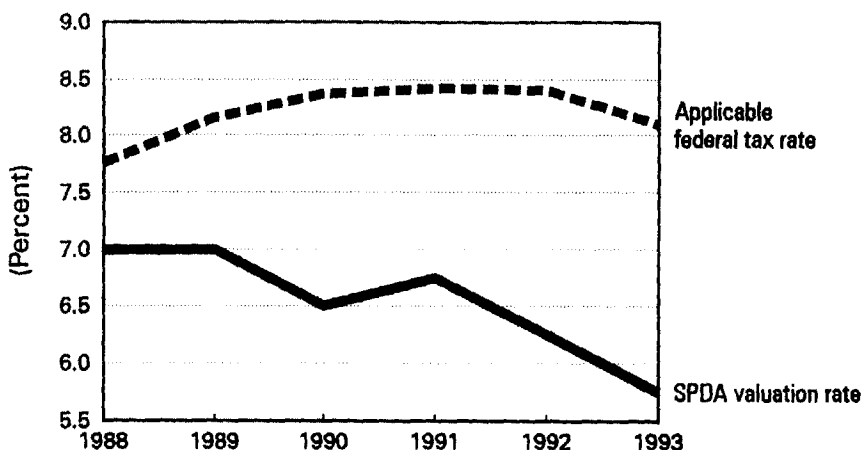
It's important to point out that companies do go a little long and that's what creates the excess profit. There are two ways you can look at whether you're long or not: (1) you can look relative to the duration of the liability, and (2) you can look at the duration of the guarantee. What really caused this situation occur is the fact that you have the rolling guarantee on the liability, and you've locked in interest rates at issue on the asset.

TABLE 5
In-Force SPDA Profitability Has Increased Profitability From Issue

Investment Strategy	Projected		Actual to Date	
	IRR	PVFP	IRR	PVFP
7-year BAA bonds	15.1%	0.8%	31.3%	5.4%
B-tranche CMO	18.9	2.0	33.5	6.2

Let's discuss AFIR versus the SPDA valuation rate. The dotted line in Chart 14 is the rate that you have to use to calculate tax reserves. The solid line represents the SPDA valuation rates for generic, less-than-five-year guarantees, issue year valuation method. You can see that the gap has widened. The reason is that the tax rate is the greater of a current rate or a trailing average rate. In a declining environment, it's going to lag. You can see the spread has gotten very high.

CHART 14
Applicable Federal Interest Rate versus SPDA Valuation Rate



What affect does the high spread have? It has a fairly disastrous effect on new issues, particularly for certain types of products like high surrender charge products. Basically, this applies to any product where the cash value is a lot lower than the reserve. If you've tried to price one of those lately and you put in tax, it's probably ruined your day.

It has also had an effect on payout annuities. The statutory rate is a lot higher, and it's higher for payout annuities. It was higher than the tax rates. So, the tax rate equaled the statutory rate. We're now in a position where the tax rate for the payout annuities is a lot higher. Those liabilities are so long with no cash vales that a small

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differential creates a big difference in tax and statutory reserves. I'm aware of companies that have historically been big in the payout annuity market and basically have withdrawn because of this particular effect. For payout annuities you can end up with a marginal tax rate greater than 100%.

For new products, this is a real problem. However, if you're out shopping for in-force blocks or looking at companies to acquire, this can actually increase the value of the acquisition, or it could lower it. It depends. If you start out with a gap between your tax and statutory reserves, and they monotonically decrease, the gap goes away. It's going to actually enhance the value of your in-force blocks.

Unfortunately, that's not always what happens. I've looked at in-force blocks where that rate differential increases for a number of years. You really can't generalize; it depends on the in-force block. This could either depress the value or it could increase the value, you just have to look at it.

As the previous speakers have indicated, company tax and policyholder tax is affected by the current environment. I will put a slightly different spin on this.

Let's say you had a front-loaded SPDA. How much front-end load can you absorb and still be competitive with alternative taxable investments that the policyholder could make. If you invest \$922 in an SPDA in a 10% environment, your result after tax is the same as if you'd put \$1000 into a taxable bond at 10% (Table 6). In a 10% interest environment, that basically translates into the tax deferrals at 7.8%.

TABLE 6
Reduced Value of Tax Deferral
At 10% Interest, Tax Deferral Covers a 7.8% Expense Load

Amount	Invested in	At	Grows to	Less 35% Tax on Gain	Net Proceeds After 10 Years
\$ 922	SPDA	10.0%	\$2,391	\$514	\$1,877
1,000	Taxable bonds	6.5	1,877		1,877
\$78 Expense load allowable					

Most companies don't have front-loaded SPDAs, but you could look at this as sort of the present value of the interest rate differentials or whatever. That represents the money you have to play with.

However, if you go through the math at the lower interest rates as Judy and Marc had pointed out, the 7.8% goes to a 3.2% so you've got less money to play with (Table 7). I would contend that since our industry tends to have large fixed marketing expenses relative to competitors, there's one or two things that have to happen in the current environment we're in. Either the industry is going to attract fewer new funds relative to its competitors and the other financial intermediaries, or companies are going to make less money and profitability will suffer.

Let's go back to the model that Judy used for interest rates. If you look at the discount rates used in an acquisition, you'll notice they are like an equity rate. You peel off the equity risk. You get down to where you've got a fundamental interest rate at the bottom. It would make sense that as interest rates fall, the discount rates the companies use to value in-force blocks of business, when they go shopping, would also fall.

TABLE 7
 Reduced Value of Tax Deferral
 At 6% Interest, Tax Deferral Only Covers a 3.2% Expense Load

Amount	Invested in	At	Grows to	Less 35% Tax on Gain	Net Proceeds After 10 Years
\$ 968	SPDA	6.0%	\$1,733	\$267	\$1,466
1,000	Taxable bonds	3.9	1,466		1,466
\$32 Expense load allowable					

I would contend that the discount rates have fallen but they've tended to lag the general interest rate environment quite a bit. Generally, they have not fallen as quickly as interest rates in general.

The second point is if you're looking at annuity blocks or UL blocks and you are getting higher near-term spreads because you guessed right in the past, that would increase the value of the purchase price. Finally, some of the leveraged buyouts (LBOs) we've seen in the past and the highly leveraged start-up companies have actually done well due for two reasons: a lot of them intended to be annuity writers. With the in-force annuity blocks making more money, they've had their higher spreads in profits. Also, a lot of them are financed with floating debt and the financing charges have reduced. That helped them out quite a bit.

An interesting question is how the current environment affects you if you're the valuation actuary. I'm going to reiterate a lot of things that Judy said. There's this big misconception among our profession that rates must go up. Now let me give you a real case. You are the valuation actuary for a company. You run all the standard scenarios and it fails one of them, and passes the others. Let's say your method in that situation is to do scenario testing to see what the sensitivity is and whether there is real problem.

When you do scenario testing, let's say you use a modified mean reversion interest generator. The question is, what do you use for your mean reversion rates in this case? I think most actuaries would use mean reversion rates that are higher than current rates. They'd say rates are probably going to trend high. This is a low environment. It would be correct to assume that rates go up over time.

However, let's say that the one scenario that failed was the pop-down. This is a company that's susceptible to downward rate trends. Plugging in mean reversion rates that are higher than the current rates sort of ensures that things are going to look right. This is something you need to think through a lot and I don't have an easy answer.

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There's a lot of smart people who think rates could go lower. As you do your cash-flow testing, don't naturally discount the pop-downs and some of the downward trends. Realize that it's very possible that rates could go down in the future.

Just some thoughts to leave you with. There has been a lot of changes in the industry lately.

I think these current changes really impact us more in the lower-rate environment than they would on a higher-rate environment. (For example, risk-based capital or minimum continuing capital and surplus requirements (MCCSR) in Canada). It's a fixed percentage of your assets, so it's, a larger percentage of your investment earnings in a low-rate environment than in a high-rate environment. It really costs us more now than it would have cost us, ten years ago, if it had been applied.

IMR changes cost us more now than they would have; companies are getting bonds called, and they're not able to take the capital gains through. I'd say the effect of a lot of these changes has been to limit investment choices and limit the strategies available, in addition to having the biggest effect in down scenarios.

I don't have an up-beat message to leave you with, I'll just leave you with the message that you must be careful. Rates can go down as well as up. Be prepared for whatever may happen.

MR. SHIGLEY: I guess one of the themes that wasn't really developed here is the impact of low interest rates on illustrations. I think as we all know, we're still illustrating products at net rates of 8% and gross rates of 9%. There was a slight mention of that here. I guess I'm a little uncomfortable with that because it sort of overstates the vanishing premium. It overstates internal rates of return (IRR). I'm not sure what we as companies should do about that.

MR. DANIEL MARTIN JR.: Can you address interest rates and the government's need to reduce the deficit, and to keep interest rates down to lower its debt on this deficit?

MS. MARKLAND: I think an actuary ought to answer that question. I haven't played economist for awhile. So I'm a bit rusty. In the last 10 or 12 years, there has been very expansive fiscal policy with huge debt and very tight monetary policy to try to counteract that. The government needs to keep interest rates as low as possible because it would help the debt burden enormously. It doesn't have control over that. That's the Federal Reserve Board's area. The Federal Reserve Board is trying to keep real rates a little bit high, because fiscal policy is still fairly stimulative. It wants to balance the dollar and balance the money supply and keep the bond and stock markets happy. It's probably the bond market that they're most scared of right now.

Every time it starts to look like monetary policy is too expansive, interest rates take off further. I think you'll find the Treasury trying to shorten the maturity of its debt right now. If you look at the steepness of the yield curve, if they can borrow short as opposed to long, then it's going to cost them a whole lot less. If rates do go up, it will be costly in the long run, because it raises long-term cost. Taking 1% off the yield these days has a huge impact on the debt. But they can't control that so their

focus has to be to get down. The administration focuses more on trying to balance. Reducing the deficit is a way to deal with it. Let the Federal Reserve Board worry about the level of rates.

MR. MICHAEL E. DUBOIS: All of the panelists have been addressing the fact that as the interest rates go down, the spreads available for expenses and profits will be tightening. Variable products have become much more popular. More companies are heading toward them.

Those are products where you can set a fixed spread essentially on the assets that you're managing as opposed to the fixed and general account assets. Risk-based capital is lower for variable products. Are we in an environment where, if the interest rates stay low, we may find ourselves having a smaller number of fixed products such as the guaranteed products that we've seen in the past? Are we looking at possibly a dying breed over time as the margins just get squeezed on the fixed interest rate products?

MR. SHIGLEY: Let me address it first. From a consumer's perspective, there's clearly still a need for significant guarantees. And it's not clear that the technology or the ability exists today to deliver those guarantees through variable products. I suspect there's always going to be a demand for guaranteed products.

On the supply side, most carriers with variable products have not had to deal with the fact that margins for expenses are fixed and locked in, which is good. It's good in that they can't be squeezed in the future, but then they can't go up either. And to the extent that carriers are used to pricing with the rose colored glasses on, then that also could lead to problems.

MR. TULLIS: I wouldn't have used the term you used. Was it a dying breed or something? It is my impression that there's been a lot of movement in capital out of purely traditional fixed products into variable and modified guaranteed annuity type products and products that limit the company's risk.

You talked about the margins being squeezed on expenses. If you're a company that wrote fixed SPDAs a few years ago, and you were enlightened enough to throw in required surplus and price with 3% required surplus (which was probably more than adequate 5-6 years ago), now you're finding the rating agencies and the NAIC requires more risk capital. It's not just expenses that have gone up and expense margins that have been squeezed, but capital requirements have gone up and have been squeezed.

One of the attractive things about variable annuities is they are locked in too. It's not just the expense margins. They may very well come out two years from now and double the requirements for some class of assets you've got on a fixed product. But I think you're less apt to get messed up on an in-force block if it's a variable-type deal.

My question also has to do with interest spreads and the pressure there. Can any kind of argument be made that you need a smaller margin in a lower interest environment?

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MS. MARKLAND: If you think about what the return to capital should be, the return on equity should fall as interest rates come down. And if you go back to an approach to life where you're building incremental risk, the return to equity ought to bear some relationship to the return to debt. If the cost of debt capital comes down, then the cost of equity should as well. There are a lot of investment people in my company; unfortunately none of them are in the CFO position yet, who feel that the return to equity now is a lot more like 10% after-tax, than 15%. There is that kind of equilibrating factor in terms of equity costs. I suppose you could also say that if inflation isn't running as high, the growth of capital for a mutual company ought to slow as well because you don't need to maintain the same kind of revenue growth to support it.

If credit spreads come down then default risks come down as well. So, if you're giving a fully guaranteed product and pulling off default risk, then that part would come down.

MR. SHIGLEY: There are a couple of carriers that we've worked with who work off ROI spreads, which should translate into a level margin. Our experience is that carriers will shoot for a fixed ROI. They settled a couple on years ago on 10-15%, and the movement in interest rates since doesn't matter. So, they're shooting for higher margins.

MR. ROBERT A. DIRICO: I'd like to direct my question to Mr. Verrier. It's in regard to one of the statements he made that I'm trying to understand a little better. He talked about the need to focus on guarantees and benefits and make price secondary. And one of the things you've been struggling with is research revealing consumers are more price sensitive than in prior years.

I was wondering how you attempt to overcome that dichotomy. Is it just a marketing presentation fix?

MR. VERRIER: It depends, to some extent, on the kind of organization that is addressing the question. If you were selling, for instance, SPDAs at the absolute level of interest rates, then as interest rates come down we also see relatively little volatility on the downside in the stock market. The consumers are saying that they don't want those kinds of products. Prices are too high. Now a couple of bad days in the stock market will drive people back toward guaranteed products.

We do see companies on the benefit side. This is easier for a distribution company than a manufacturer because of the nature of the game. Once a customer has bought into the benefit, then it's simply a question of finding the best price, and prices certainly have increased over time. You might lose some business. Once the purchase decision has been made, it's simply a question of funding that purchase decision. Interest rates and those kinds of markets have had less impact than we would have expected.

