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SELECTING AN INVESTMENT STRATEGY

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- With so many types of assets to choose from, how does one go about determining an optimal investment strategy? Speakers from two firms will discuss how they go about deciding where monies should be invested, taking into account today's economic environment and prospects for the future. The speakers will present their views on how investment decisions are affected by product features.

MR. ROBERT J. LALONDE: We were going to talk about CD annuities. We're going to be exploring some of the facets that are involved in selecting an investment strategy. To me it's a very mysterious process, and I have a great degree of respect, being a layman, for those people who have to make investment decisions and actually buy and sell assets. And I'm real hopeful that you'll get some sense of what is involved in that process. I know that this session will not turn you into investment managers on your own so that you can handle a portfolio yourself, but we will have to be handling the decisions about cash-flow testing and what is involved in selecting an investment strategy. So we're going to get some perspective about what's involved there.

Let me introduce our dynamic speakers. I'm going to be the first dynamite speaker. Our second speaker will be Steve Guyer, and our final speaker will be Frank Alpert. Frank is the vice president and liaison officer for AMEV Asset Management. He's going to tell you more about what his company does. Basically it handles the asset management of its life subsidiaries. Frank coordinates between the life companies and the asset management firm.

Steve is an account manager for Asset Allocation and Management Company. That's a company located in Chicago that manages assets for 82 different insurance enterprises with over \$4.5 billion of assets under management. He's a graduate of Northwestern University and a Chartered Financial Analyst (CFA). Steve has particular expertise in mortgage-backed securities and tax advantage instruments, so we'll be looking forward to what Steve has to say.

I have a few opening comments which I'd like to share with you. As vice president for marketing for PolySystems, we have some excellent software that can be used for cash-flow testing. I am sometimes asked if we have the ability to identify the perfect, the most opportunistic investment strategy. Do we have a program that will solve for the investment strategy that gives us the best rate of return for the assets and the liabilities that we have?

- * Mr. Guyer, not a member of the sponsoring organizations, is Portfolio Manager of Asset Allocation and Management Company in Chicago, Illinois.

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So I thought I'd talk a little bit about what's involved in that process because it certainly sounds like a very straightforward question. How do you do this? What are the factors that are involved in this whole process? The first thing that we have to think about is the kind of asset, the classification of asset, that we'd like to buy. Let's start with some bonds.

We have coupon paying bonds. This is not going to be an exhaustive list. Consider me to be a layman at this. There are some people that are real professionals at this, but here are a few things that we have to choose from: bullet bonds (which are noncallable), callable bonds, and sinking fund bonds. There are actually puttable bonds, some spelled with one "t" and others spelled with two "ts." There are zero coupon bonds and there are convertible bonds. The list on bonds could go on for quite a while, but I'll keep it brief. We could turn to mortgages. That's another opportunity for us to make money. Here's a list of just some opportunities: commercial mortgages, residential mortgages, collateralized mortgage obligations (CMOs), Government National Mortgage Association (Ginnie Mae), and Federal National Mortgage Association (Fannie Mae). We could get into a portfolio of stocks if we were a property and casualty organization, but as a life company, we're probably going to be limited to what we can invest there, but we can invest in some stocks.

The hot topic these days is derivative assets. Some of them are imaginary assets. I was at another session and I learned about notional balances. You know, they're just deals struck between organizations about flows of money between two organizations, some of which can be fixed and some of which can float. But derivative assets are an opportunity for investment managers to control the risks that they have and I'm sure that we're going to be hearing something about that. I'm not going to take the time to explain to you what those are. I just want to kind of dazzle you a little bit with some of the options: interest only (IO), principal only (PO), planned amortization class (PAC) and target amortization class (TAC). These are all terms used by the investment people. Here's some more residuals: Jump Cs, Toggle Zs, reverse TACs, and companions. If you're writing a program to build an investment strategy, how do you do all this? Many of these assets are being created on the spot, and we can only program what we know about. It's pretty hard for us to make a random variable that creates some kind of imaginary asset.

Well, once we've made some choices about assets, we want to think about what the distribution of these assets should be. Should we buy 10% of this and 15% of that and 2% of this over there? We have a large number of different percentages and choices we can make about our asset portfolio? And then we have to make a decision about months or duration of assets. Do we want to buy six months? Do we want to buy six-year, thirty-six month, or thirty-year obligations? If you were going to write something that was going to study this extensively, you'd want to look at every possible combination.

Quality. That's another factor that we have to look at. At least 20 different quality ratings. Some are investment grade. Those are the good guys. Some are the marginal ones and then you probably could have some that are between.

We were just talking about buying strategies. Then there's the other end, selling them. Once you have them you've got to sell them. What are the selling strategies?

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Do you want to sell the longest bonds or the shortest? Do you want to sell one with the most capital gain or one with the least capital gain? Do you want to offset gains with losses? What happens, then, is we create this black box. This is a Stealth box. This box is so black that you can't even see it, but can it be done?

You've heard about actuaries who have done random cash flow testing. They start up their stochastic models and they run it through 500 different scenarios. They turn the computer on Friday and go home for the weekend. Now how long do you think it would take a real fast computer with a super fast box to be able to analyze all the possibilities that we talked about? Two hundred eighty-five years! You could go to Jupiter and back and still not know what the answer is. So that's a lot of time for a computer. But the mystery of this is that people like Steve do these kind of things within four minutes. How do they do it?

MR. STEVEN W. GUYER: Well, how do we do it? As a portfolio manager, I don't work in a vacuum. I think that's the first thing you have to understand. We have many different classes of assets to choose from and the most important thing is to not sit in your office and just make decisions as to whether or not you should purchase the highest yielding security. You need a lot of input from other areas -- not only is there the marketing department of the insurance company, but you also have regulatory and other constraints as well. So you can't just sit there and look at the asset classes and say I want to be in the highest yielding security because, first of all, that might not always turn out to be the best security. Your yield might not actually be realized anyway. There are other things you have to look at and that's what we're going to focus in on -- which ones to choose.

There are a couple things we have to know from an insurance company. As a portfolio manager you need input. You need input from the company. You need to know its investment limitations. You've got to cash-flow test its liabilities and assets. You need product characteristics. You need to know what its tax situation is like, currently, and going forward, and then once we have those factors, we can start looking at the economic scenarios and making forecasts and get into relative value analysis regarding assets.

Determining company limitations is the first place to start. We need to know what the quality goals of the company are. Certain companies are more risk averse than others. Certain companies only want to be in the investment grade sector. Certain companies only want to be in government-quality securities. You have to talk about the surplus of the company. Is its surplus strong? Does it need to build up surplus with capital gains? Is it attractive at this point? Is it loss constrained as well? Then you have to look at regulatory issues, and regulatory issues are changing almost everyday. As a matter of fact, one issue right now deals with how certain states are looking to overturn the Secondary Mortgage Market Enhancement Act, which will directly impact the relative value within the mortgage market, and it will affect what amount companies can purchase in mortgage-backed securities. So that's something you'll always have to be up to date on. You have to know the tax situation and management's risk tolerance as well.

I talked before about tax status which could directly affect the relative value in the market. You need to know if a company is paying under the regular tax scenario

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right now or under the alternate minimum tax. In addition, you also have to know, or try and get from the company, probabilities that the tax situation might change. For instance, if you were buying municipal bonds and you're under the regular tax mode and, all of a sudden, you convert into the alternative minimum tax, municipal bonds are going to be the last place you want to be. So you want to get that input from the company and try and get as much information as you possibly can. In addition, tax laws are always changing, as everyone knows, and that can directly affect the relative value in the market as well. If Congress starts to play with the dividend received deduction again, that's going to directly affect the relative value of preferred stocks as well as common stocks, so that's something you want to consider as well.

You also want to go through cash-flow testing, modeling your assets and the liabilities. You want to compute durations and convexities for both the assets and liabilities. Measure interest rate risk exposure and then compare your past results with your expected results and how they might have differed. And then in the case of annuities you want to talk about spread management as well.

We start getting into the job of the portfolio manager after we get that information from the company. You want to try to forecast, obviously, which direction the economy is going. Currently, are we in the expansion phase, recession, inflation, deflation, or stagnation? And what you try and do is assign probabilities to each of these occurrences. Some of the inputs we look at are not mysteries. Federal Reserve policies. Is it stimulative or restrictive? What is the probability that that can change? Right now there's a possibility that Greenspan might not be reappointed in which case that could dramatically affect the anti-inflationary posture of the Fed. Sources of growth, GNP in terms of consumer spending, government spending, and investment spending are other factors.

Then some other inputs of factors. You want to look at the international implications. Right now something that's currently in the news is that the head of the Bundesbank, Poehl, has just stepped down. Is the person that's going to be put in his place going to be as anti-inflationary as he was. In addition, you want to look at commodity prices and other sources of inflation. Another factor at one point was the Gulf War. In addition to that, you've got political unrest in the Soviet Union, and that could certainly affect interest rates here.

We like to look at the yield curve as an indicator. One of the factors that we look at is shape of the yield curve and what it tells us. Given the fact that we have a very steep yield curve right now means that the government is trying to stimulate the economy by lowering short-term rates. But, given the fact that long-term rates have not come down as much means inflationary expectations are right now very stubborn. And, as a result of that, people are forecasting an expansion right now. They think that we're going to come out of this recession. What does that mean for relative value in the market?

Leading indicators are something else we look at. Housing starts are starting to turn around right now. That's obviously going to have a big impact on the economy. We use the Commodity Research Bureau (CRB) index as a gauge for potential inflation.

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The next thing we do after we have an idea of where we think the potential paths of the economy might be is to look at the relative risks in the fixed income market. You've got liquidity risk, credit risk, duration risk, and convexity risk. Other risks might be something like foreign currency risk or the risk that tax laws might change and that might have an impact on relative value in a tax exempt market.

As a portfolio manager it's really my job to present and quantify these risks to the company for which we're managing money. In the case of liquidity risk, it's typically measured by the difference between the bid and offered price. The highest liquidity in the fixed income market is in the treasury market. The shorter the treasuries the more liquid and the tighter the market, being the difference between the bid and asked spread. They typically trade in a 1/32nd point market. The other end of the spectrum is junk bond liquidity. Some junk will trade in one-to-two point markets. The lower liquidity or the higher risk junk trade in five-to-ten point markets depending upon the volatility of that market. If you were to try to get a bid on junk about a year or a year-and-a-half ago, they were probably trading in about a five-to-ten point market. So liquidity can change over time depending upon what the market's perceptions of those assets are.

Credit risk is typically defined as the degree of certainty that the issuer will make good on its interest and principal payments. They're ranked by major credit rating agencies from triple A to D, D being in default. The U.S. treasuries are perceived to have no credit risk, so that's the benchmark. Anything that trades off that, I mean, higher than the treasury yield, some of that return will be due to the credit risk that you're taking. For instance, right now a seven-year noncallable corporate bond will trade somewhere on average of 90 basis points higher than the seven-year treasury. So that 90 basis points, given that these are noncallable just like treasuries, is the amount that the investor is being compensated for that credit risk. High-yield bonds will trade at spreads over treasuries, anywhere from 250 basis points for the higher quality issues like the RJRs or Duracells, to 1,000 basis points or more depending on how low in quality you go.

What happens to credit spreads over an economic cycle? Typically, credit spreads will increase or decrease depending on people's perception of the path of the economy. As the economy gets better and improves, people will need to be compensated less and less for that credit risk because the economic prospects or the profitability of that firm will be perceived to increase. So, as a result, spreads tend to narrow or decrease. When things start to darken, when the economy starts to slow, people will need to be compensated more and more for that credit risk. For instance, Sears five-year paper was trading about 175 basis points or 1.75% over treasuries about three months ago. You can buy Sears right now more along the lines of 1.2% over treasuries. So credit spreads have tightened. Credit spreads are very volatile and they can change very quickly.

As I said before, we use the seven-year treasury bond as a benchmark of an issue that has no credit risk. Now utilities aren't the most volatile corporate bonds in terms of reacting to relative strength in the economy, however, this relationship between treasuries and a utility will change over time depending on people's perception of the economy. As the economy weakens, you'd expect this spread to be higher and as prospects get brighter for the economy, it would be tighter.

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The other fixed income risk that you want to focus on is duration risk. The higher the duration of the security, generally speaking, the more volatile the security will be in terms of price. Modified duration is a measure of the price sensitivity of a bond to a change in interest rates. The higher the duration the more volatile the price of the security to change in interest rates. We took a two-year treasury, the sevens of 93 at a price of par 0.1875. It will give you a 6.89% yield and a 1.84 modified duration. This means the price of the security moves 1.84% for a change of 100 basis points in yield. Given that the yield curve is so steeply sloped, the next bond, the Treasury 7.875 due in 2021 has an 8.23% yield versus a 6.89% yield. Part of the reason you're getting compensated for that increase in yield is the fact that it's a more volatile security. The latter security has a modified duration of 10.95. Well, if interest rates fall 50 basis points, what happens to the relative price of those securities? The shorter treasury, the one with the lower duration would increase in price from par plus 0.1875 to 101.12. The long duration security, the 7.875 of 2021 will increase in price from 96 to 101.60 for a gain in price of 5.6 points versus only 0.94 for the shorter duration. The 30-year bond with the higher duration will increase significantly more in value. If interest rates rise, the opposite will be the case. The shorter duration vehicle will change less in price. That will decline in price 0.9005, whereas the longer duration treasury will decline five points.

The other fixed income risk that we attempt to quantify is convexity risk. Convexity risk is basically the risk that your duration will change over time. Noncallable bonds will perform better than callable bonds in a decreasing rate and increasing volatility environment. That's because noncallable bonds are more convex than callable bonds. That is, the rate of price increase is greater than that of comparable duration callable bonds. And this is easily seen in the mortgage market. Mortgage bonds are typically negatively convex. That means that when interest rates rise your modified duration will actually lengthen and when interest rates fall your modified duration will actually shorten, which is the opposite characteristic that you want in a fixed income vehicle. Now that relative spread between seven-year average life Fannie Maes and the seven-year treasury will widen and tighten depending on the relative volatility in the market and the impact of prepayments on that mortgage security. As volatility increases and as more people prepay their mortgages, the duration will shorten. As a result, the investor has to get compensated in increased spread for that. So that relationship will change over time.

It is important to have some sort of an opinion on which direction interest rates might go. Let's discuss an Associates Corporate Bond, a Ginnie Mae Nine, a Treasury, and the fourth item, the Bear Stearns 89-4C, which is a CMO, and it happens to be a planned amortization class CMO which is a very stable mortgage security, meaning that you have a certain amount of call protection with that security versus the Ginnie Mae. In the base case, an investor might want to be in Ginnie Maes or the Bear Stearns. However, if interest rates decline 150 basis points, the investor would rather have been in Associates Corporate or the treasury versus the two mortgage-backed securities. The opposite will be the case if interest rates rise 150 basis points. In that case you want to be in the Bear Stearns or you want to be in the Ginnie Mae which will decline less in value than the other two securities.

I want to kind of lead into the next topic, which is, what is the goal for an annuity writer? Should they be looking at strictly total return or should they be spread

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managers. We believe that total return is an inappropriate measure for an annuity writer. Suppose you set your comparison index as the 30-year treasury bond index and you buy 30-year bonds. Suppose you happen to outperform the index. If interest rates rise, you're not going to be able to increase your crediting rate. So you might actually outperform an index and yet be unable to meet policyholder claims. We believe that spread management is the more appropriate objective for annuity writers. Portfolio managers must select assets that will meet current crediting rates. Yet you need a certain amount of flexibility in case interest rates should rise. The objective is to earn a consistent spread over the crediting rate.

I'll discuss some general points on what we look at in terms of annuity products: what the portfolio manager needs to know. We need to know the product liability cash-flow characteristics; what kind of withdrawal or bailout provisions there might be; what's the current crediting rate strategy and expense levels. In addition, there are some other things and finer points that we need to know. What is the minimum/maximum rate, how long is this rate guaranteed, and is the crediting rate tied to any particular benchmark? For instance, we've had some clients come to us and choose very unique benchmarks, such as the Moody's Corporate Bond Index which is a very difficult index to manage against, basically, because there's no hedge against it. You basically have to buy all the bonds in the index. If interest rates happen to rise and you have to increase your crediting rate, you wouldn't be able to do it, so you've got to take some sort of basis risk in that case. In addition, we'd like to know the characteristics of the buyers. For instance, are they highly sophisticated? Do they know what the typical interest rate is in the environment? How prone would they be to withdraw funds?

Here's the ideal for a portfolio manager in terms of designing an investment strategy for an annuity product. Ideally, we'd like to start with the investment manager and the investment manager would choose a portfolio of assets, in this case fixed income vehicles. We then adjust the yield that is received on the asset for those various fixed-income risks that I just talked about. For instance, if you're in an illiquid security, you would want to reduce that yield by the amount of that liquidity, the fact that you have less liquidity. So in the case of buying junk bonds, you would want to adjust your yield down, say 20 basis points, for that. If you've bought a junk bond at a 13% yield, you'd want to tell the insurance company that you want to reduce that yield by 20 basis points to 12.80. And you'd want to adjust for those other risks as well.

Assuming that your durations are matched on your assets and liabilities, in the case of junk you'd want to assume some sort of default assumption, you'd want to reduce the yield from that 12.80 down maybe 100 basis points. So now you're at 11.80. And if you have any other adjustments you'd like to make, if there's a convexity problem because the bonds are callable, you might want to adjust the yield down again. So from there when you adjust for all the fixed income risks assumed, you come up with a realized yield. You give the company the realized yield, it subtracts its spread, and it sets its crediting rate that way.

Unfortunately, that's not the way it typically happens. What we typically see is an insurance company that needs a specific rate to market its product. It needs the yield to be competitive. It needs 9.5% or whatever it might be. It would go to the

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portfolio manager and say this is what we need. The portfolio manager assumes fixed-income risks in order to get that yield and come up with the realized yield. Then the big question is, does the realized yield equal the required yield? It might not.

MR. FRANK J. ALPERT: Investment people are pushing very hard in one direction to recognize the risks in the portfolio, to make sound investment decisions that are based on where the market is and so on, and the product people are pushing to get the maximum return or the maximum yield or something like that. I would like to talk about our process of setting an investment strategy and how it applies to three particular products. Our lunch speaker talked about a strategy having three elements: risk, resource commitment, and management style. I think it will be very clear to show how those things enter into our process. The most difficult one is management style. I will have to say that he was giving an easy illustration where there was a single CEO in his team. But in our environment, we basically have to reconcile two management styles, that of investment and the product manager, and that creates the whole design of our process.

First, I'd like to describe what our firm actually is. AMEV Holdings is a holding company that owns five insurance companies or, in one case, an insurance group. We own a company that specializes in credit-related casualty insurance. We have a company that specializes in a very special kind of automobile insurance, loosely called substandard or special risk auto insurance. We have a life company that specializes in rural areas selling burial insurance. And we have two significant companies that sell life and health coverages. We also have a mutual fund group associated with one of the life companies, and we also have independently a venture capital group.

The philosophy of the investment management area is summarized here. The investment managers who run the assets for all of the insurance companies are to strive for active management of the portfolio so as to obtain the best possible total return within the risk limits and other constraints that are imposed on us. Try to keep this in mind because when I come back to management styles and the process, this is an important difference between us and the product people.

Very generally, the process that we would like to go through every time in setting an investment strategy is to start with a risk analysis and that means the risk of the entire product, and I'll give some examples of what people have defined as risks. The asset managers set up a range of possible portfolios, a list of possible assets that might work. We do extensive evaluation of those choices. Well, I should say sometimes it's less extensive than you might think. A lot of thinking and maybe not as much time.

We pick a particular strategy, and then establish a benchmark. That's an important concept in our process because picking a strategy is easy. It is implementing it and holding to it that may be the more difficult part. If I leave you with one thought, it would be that it is the tail end of the process. Having chosen a strategy, what do you do with it afterwards? How do you implement it?

Actuaries generally have told me that they perceive the risks, the uncomfortable things that can happen, the painful events they wish to avoid, and various phrases like a drop in surplus or earnings jumping around or somehow something that affects

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the rating. But, the most common word and the thing that comes up most frequently is just surprises. But actually if you examine what each of these guys are saying, what the risk comes down to is a matter of capital. Is the capital of the company somehow going to be impaired or do we have an arrangement between the insurance side and the asset side that, in fact, we're going to get a good return on our capital and grow the capital? In that sense, we are looking for total return for the entire enterprise.

First is risk analysis. Second is evaluating the choices and choosing a strategy. Having done that, we then implement by establishing a benchmark. The benchmark portfolio, first of all, should meet all of the requirements of the product and achieve satisfactory returns and a tolerable degree of risk. It is a portfolio that, if the asset managers had no particular view of the world or, in fact, were just very lazy, they'd go out and buy it and hold it as an indexed portfolio. It is what the product manager will rely on for his pricing because he knows that's what he can expect to get. It is what the asset manager will be judged on. He must at least match the performance of that benchmark. And again, the final thing is we establish that it will produce the right results before we do this. It is convenient to have the benchmark consist of a published index because that means you can always get your hands on the statistics related to it, what the yield is currently on the benchmark, what the return has been on the benchmark, how it has behaved in past markets. Also, a published index is objective third party; you don't get into questions about the data being manipulated.

The reason that a benchmark is very helpful in our setup is that, in fact, the product managers like spread and return. They like to manage on a spread basis and there are very strong reasons for that. We are well aware that the product manager is dealing with a bunch of customers who want book value guarantee. They are not at all concerned about whether the 30-year treasury went up or down. They just want their book value guarantee. By the way, that applies in all our lines of insurance. We go through this process for the casualty coverages as well, because the casualty policyholder doesn't care about the value of the bonds. He wants the dent in his car fixed, whatever it is. Regarding the assets backing that up, well, we're still trying to manage to get the most return out of them. The benchmark is the thing that crosses the bridge between the two of us. The asset manager is judged on total return against these indices. The product manager relies on the yield from the index and he knows that that's what he can count on, and therefore, the two separate teams can go their way, at least using the same thing to talk about.

I'd like to illustrate this process with three specific products. The first is a very traditional fixed-premium whole life product. It is sold in the rural south to prefund burial benefits. It has practically no sensitivity to almost any outside influence once the policy is sold (I should say once it gets to its first year). We have, unfortunately, high first-year lapse rates. But after that it stays. Because of the relatively small size of the portfolio, there's some statistical variation in the cash flow, but it is not at all tied to interest rates. These people don't cash it out. They wait until the benefits are needed for their funeral. This has a very easy strategy to define. There are almost no risks other than the minimal one of meeting the policy guarantees. It is nonpar, so we don't have to worry about dividends. We can go with the easiest way to achieve superior investment results, thus getting better returns. We are given a wide duration range. The assets on this could have a duration comparable to a 30-year bond or

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could be as short as perhaps a three- or four-year bond. Since there is no real cash-flow risk as long as there is cash-flow variability, and as long as we are maintaining the liquidity for the next year's claims, we can invest in anything else. We can use commercial mortgages which, although they have superior yield, are highly liquid. We can use common stock.

What if quality spreads have narrowed to the point, as Steve had said, market conditions are such that the single A bond is selling almost at the same point as the treasury. Well, why have a single A? Buy the treasury. Get the same return with much less risk. If the spreads are wide and way out, and the single A becomes cheap, that's the time to buy it. Lock in that higher yield. So we will actively manage this portfolio across the sectors, changing the percentages that we have in each sector and how much and what we are looking for within the sector.

The benchmark for the traditional portfolio would need 3% cash to cover liquidity needs over the next several months. Long U.S. bonds. That is the benchmark primarily to recognize the fact that there will be times that we want to be in treasuries. Long corporates, commercial mortgages, and common stock.

In addition to stating the benchmark in these terms, we will also state a guideline that the investment manager can deviate from the benchmark. It would be pointless to put up something and say you always have to be that way. You don't need the investment manager. In this particular case we might say, for example, the benchmark is 3% cash, but you can be anywhere between 2% and 8%. Common stock is 6%, but you can be anywhere from let's say 3-10%. Commercial mortgages probably would be very close to that number with very little deviation because you cannot maneuver very much with those. If you have 15% of your portfolio in commercial mortgages, it's pretty well going to stay there until the mortgages mature. But between long corporates or long treasuries, we could shift back and forth. We could have short treasuries. We could have cash and so on. But the formally defined guideline deviations from the benchmark are an important part of establishing the investment strategy for a particular product.

Next product. You might call it son of the last one. This is sold by the same company. It is the only product that you're now selling. Instead of that old traditional life, this is an indexed life insurance plan also to fund funeral benefits. The benefits are indexed to inflation after the policy is paid up. It is sold on a single premium five-year pay or ten-year pay basis, and as I say, once the premiums are all paid, then both the cash value and the face amount are indexed to inflation. The way this is sold, by the way, is through the funeral homes. A family member goes in and says, "The thing I want most when I pass on is that coffin with the brass handles and I like those flowers and I want to be in this plot here. What do I do for that?" And the funeral director says, "Well, I'll tell you right now that would cost you \$3,200 and if you buy this policy, whatever the inflation is when that policy pays off, then I'll give you the funeral for whatever it costs then." I should make it clear, by the way, our guarantee is only indexed to inflation.

The funeral director is taking the risk that funeral inflations are the same as whatever index we use. Very successful. It works very well in the market where it is. Very obviously, it has a lower average size. Perhaps not quite so obviously, it has a higher

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average issue age than its predecessor and what are the things that are appropriate for this?

When the company identifies the risk elements to us, it obviously feels that the assets have to, over the long term, return enough to cover inflation, to cover the benefits of the policy, plus its expenses, plus its profit and so on. Several hundred basis points over inflation is the long-term goal. Second, it says for its own profit reasons, for its flow of profits, it wants to make sure that the assets track inflation on a short-term basis pretty much year by year. We also, obviously, have to cover the cash flow from debts.

At lunch we were talking about how in cash-flow testing death claims are very seldom a significant part. In this particular product, in fact, they're about the only cash flow after issue. And, unfortunately, because this is in a state which has a rather restrictive view of what life insurance companies can and cannot do, staying within the state's rules is, if not a risk, at least a powerful constraint on the possible list of assets. I might point out in this particular case the first and second objectives are mutually exclusive. The highest correlation with inflation on a year-by-year or month-by-month basis is short-term interest rates. Long-term interest rates have very low correlation with inflation. But if we invested in short term on this, we would never earn enough to come anywhere close to the required returns.

The actual strategy was developed on this through a multi-stage process. We ran off the expected cash flows under a number of different economic scenarios and then ran that into an asset model for each of the expected cash flows assembled (I think they said something like 2,800 possible portfolios) and tracked the returns of those. Out of that we selected a number that seemed to work. The process that was done, by the way, was a very interesting one because it involved the concept of an efficient frontier. The firm that was working with us developed an efficient frontier of assets, and I'm sure you've all heard that phrase where you plot things by risk and return. However, in this case, both the risks and the return were measured in terms of the capital of the company. How much capital did we have to put in? How much return would we get on it? And that created this frontier of portfolios all of which were efficient in the sense you couldn't get more return without increasing the risk or you couldn't diminish the risk without cutting the return.

Out of that we selected this as the benchmark portfolio: cash, 10-year corporates, 10-year governments, stocks from large capitalized companies, and stocks from small capital companies or venture-capital-type endeavors. Now this differs significantly from the predecessor package. First of all, we have a much narrower range of maturities on the debt. We really do mean to stay within let's say 7-15 years here, not 2-30. The reason being that too long a maturity simply tracks inflation very badly and you can get hurt on an annual basis. Too short a maturity sacrifices too much return. We use stocks because they do a better job in the long run of keeping pace with inflation. And we have a somewhat higher cash requirement because there is more volatility in what the cash payouts could be next year, because we're not exactly sure what the inflation will be.

The third product is a very different one, probably the most different product that I've ever worked on in trying to establish an asset and liability coordination. MVA means

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market-value adjusted annuity. This is like a single premium deferred annuity with a very long guarantee, five years, seven years, ten years. We guarantee the rate for 10-years. If the policyholder surrenders before maturity, what he gets is subject to both a surrender charge and a market-value adjustment. The market-value adjustment is essentially the same formula as a zero-coupon bond except the interest rates that are used in that are not the general market rates, but the original guarantee on the policyholder's annuity and what we are currently guaranteeing for the remaining term of policyholder's annuity. So the market rates that are used in the adjustment are annuity market rates, not the general capital markets. And one final point, the reserves on this are essentially held at this market-adjusted value, annuity market-adjusted value, and the assets are also held at market. Of course, in the asset case, they are marked to the capital market's interest rate level. The annuities are going to be at whatever comes out of the crediting formula. In a sense this reacts almost opposite to any other deferred annuity that you've ever spoken of.

What are the risks here? First of all, there is a very big reinvestment risk. One of the strange things about this is that although it is relatively easy to find a successful investment strategy, the penalty of being outside that successful range is much faster and much steeper than it is for a regular deferred annuity. So, in a way, it is easier to have a successful investment strategy. In a way, the penalty for not doing it is much worse. There is a reinvestment risk here. If we take today's 10-year bond and guarantee that rate for 10-years, that essentially assumes that every coupon we get is going to be invested at today's interest rate. It doesn't happen that way. Even if interest rates don't change, you're subject to the drop off of the yield curve as you get closer to maturity. But the fact is sometime during this time period interest rates are going to be lower than they are now. There is a risk at maturity. If we say we will try to stabilize that reinvestment risk and we'll go longer, and, if we have these things invested in 20-year bonds and the guy wants his money back in 10 years, and if interest rates are substantially lower than they are now, then we are in trouble. In fact, even if he doesn't want his money back, even if he says roll it over, we still have to guarantee 10 years from now at today's rate. There is a big risk in matching the assets and liabilities because they are both marked to market and changes in the reserves go through the income statement. You can produce huge swings in annual earnings. The kinds of swings that basically bother the head of the firm considerably. Even with a full explanation, they don't like to see that.

And then one of the final items and one of the most surprising things about it is the relationship, the right constraints that the product actuary or product manager has in managing this product, because what you do on new business has an effect on what the books say the old business is. Remember I said the market-value adjustment is based on what you're now crediting to annuities of the remaining term and your reserves are held on that adjusted basis. Let us say that to save money, because outside interest rates have gone down, you really want to slash the credited rate on new business. The reserves on the old business go up. What you save on the new you lose on the old, so there's a very tight, narrow band that you can maneuver while not throwing your profit stream totally out of whack.

Given this kind of product what are poor investments? Mortgages, because they don't have the right sensitivity to interest rates. Zero coupons or principal-only obligations. Those would be ideal, but they're poor for this particular thing because

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zeroes or principal only are essentially at treasury rates. That is simply not enough return. It gives you nothing to cover your expenses, nothing to cover your risk. The ideal thing would be a zero coupon corporate. That is something that has the spread of a double A, or A, or triple B over treasuries and delivers all of its cash flow at the time that you're paying the maturity value. The reason it's a poor investment for this product is that it simply doesn't exist, or if it does you're never going to get a hold of it. In fact, at one point, the actuary on this remarked that of all of the available investments in the whole world either they didn't work or they weren't available, and if they did work and were available, he couldn't model them. Another poor investment for this is a callable corporate. If interest rates drop and you think you're going to make money on your reinvestment you lose it. The asset disappears from you.

The last item is common stock. It is presumptively a poor investment because common stock does not track changes in interest rates that well. Not because it's too volatile, but for the circumstances of this product, it may not be volatile enough; that is, it may not match the way the liabilities change with interest rates. The case on that is still open, though, as you'll see.

What did we come up with as a model portfolio for this? Basically, a portfolio of medium-grade bonds. That is to say, low investment-rated bonds -- still investment grade but low rated. Duration matched which is very important for annual profits. Essentially a barbell-shaped portfolio where we have stuff both shorter and longer than the targeted maturity because that produces better return and less volatility than the last item, common stock. We are still trying to demonstrate, whether or not common stock could be useful in this portfolio. It has, as I said, some known disadvantages to begin with. On the other hand, it has some great advantages, one of which is, over the long run, common stock produces more return than any debt instrument. Another advantage is that, surprisingly, the addition of five or ten or some small percentage of common stock to a portfolio tends to make the portfolio less volatile under certain kinds of conditions, and that lower volatility may be an improvement in this particular product, in the annual results, and in the overall returns. As I say, that's a question that could go either way and we haven't proven it one way or the other yet.

So there you have, in essence, our process of arriving at an investment strategy. It is very much geared to the fact that we have two separate worlds that really seem to work against each other and are aiming at very different things. We try to set up a process where the needs of both are recognized, where both are involved in establishing the process, and where it is implemented through a benchmark portfolio that becomes the performance standard for the respective product.

MR. LALONDE: Before I ask for questions I want to express my appreciation and thanks for the time that you two individuals spent in preparing your remarks. I was very fascinated by the comments, and it's interesting to see that there's a portfolio being investigated that includes common stocks, which is not something that we see ordinarily. I was kind of curious myself about this MVA annuity. Who's the consumer that you're marketing this to and what kind of a form is this? Is this on a group or an individual form and do you show those as separate accounts or does it flow through the annual statement just like any other policy?

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MR. ALPERT: Actually, the guy who designed the product is in the audience. I'd like to call on him to answer your questions.

MR. STEVEN M. GATHJE: The MVA is a group product in every state except Minnesota. We set up a discretionary group trust and it's being marketed through that. Minnesota, as well as a few other states, will not allow discretionary groups. Minnesota has an individual modified guarantee annuity regulation that allows us to market it there, but most states have not adopted that regulation. Therefore, since the product doesn't comply with standard nonforfeiture law for individual annuities, if the state won't let us in on a discretionary group product basis, then we just simply can't sell it in that state. We can sell it as a group product in probably about 42 other states.

We have our own broker/dealer. It's a registered product security.

MR. LALONDE: Registered?

MR. GATHJE: And it's both an MVA and a variable annuity combination, so in addition to 10 guarantee periods on the fixed side, there are also mutual fund options on the variable side. The way it's being marketed is it's kind of appealing to the investor who wants the stock market effects, the ability to gain the higher returns of being in mutual funds, but who doesn't want to lose the principle. The prime marketing story is to come out and say you have \$100,000 to invest. We'll guarantee that in 10 years, and you will still have your \$100,000 by putting in \$40,000 or \$50,000 into the 10-year fixed guarantee and then put the remainder into the stock mutual fund which should enhance your return. But if everything goes absolutely awful, you'll still get your \$100,000 back. So it appeals to the middle-of-the-road type investor. That's the hope anyway.

MR. LALONDE: Does this come through on a separate accounts statement?

MR. GATHJE: Yes, it's all held in a separate account.

MR. LALONDE: Okay, thank you very much. The floor's open for questions.

MR. STEVEN P. MILLER: I have a question for Steve Guyer. You told us why it is important to have an opinion on which way interest rates are going to go. In general, making a bet on interest rates can be a very dangerous thing if you happen to guess wrong. Wouldn't it be better to have a portfolio that tried to insulate you from having to have an opinion?

MR. GUYER: Actually, the meaning was asset classes can vary dramatically in return profiles depending on where interest rates went. For instance, if you knew interest rates were going to fall, what you want to be doing is buying the longest duration vehicle you possibly could. However, that would be making a dramatic bet on which way interest rates would go. I think the highest yielding instruments in the current environment in the base case were mortgage-backed securities. If interest rates rose 50 basis points, I still think that those would be relatively high yielding. So, those securities would be good in a pretty stable interest rate environment or if rates were supposed to rise. If you thought rates were going to fall and you could make a very

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compelling case for it, then in that case you wouldn't want to be in those securities. So ideally you'd want to have a certain percentage of your assets in securities that would perform well in a falling rate environment as well. So you could build up a core portfolio, say, 40%, 50% in mortgage-backed securities. Then you'd want to add something that would give you more positive convexity, so you'd want to buy some noncallable bonds as well. I hope I didn't lead you to believe that I can call interest rates.

MR. LALONDE: See the computer would have taken 285 years and he just did it in one minute. Go ahead.

FROM THE FLOOR: I appreciate Mr. Alpert's comments on performance measurement because I do believe that the way that performance is measured does have a bearing in a practical sense on the investment strategy. A question for Mr. Guyer. You commented on performance measurement for annuity writers as being spread. I wonder if you could just provide your comments on writers of other lines of business besides annuities.

MR. GUYER: Actually, I think we kind of focused our attention here on annuity products. I think total return, as I mentioned before, probably would be an inappropriate measure for annuity kind of products. One thing I'd like to clarify is that when you look at an insurance company, you aren't necessarily managing those funds like you would a pension fund because you've got all these different constraints. We've had clients come to us and think the most important thing is total return. Total return is not appropriate for several reasons. First of all, you've got constraints. You've got liability constraints. You have to match duration. You have regulatory constraints. You've got tax constraints. You have all these other inputs that you have to deal with. Once you overlay all those constraints, then you can look at performance on a total return basis. Once you get that kind of benchmark where you have to be, then you could say, "Well, once I've have the ability to pay all my liabilities, what's my excess return?" and it might be the building of surplus over time. You might look at surpluses as being an appropriate measure.

MR. ALPERT: I'd just like to clarify one point on that. The difference between total return management and traditional measurement of performance in insurance companies is a very live question. It is a continuing source of discussion, sometimes confusion, sometimes outright riot. In our organization the asset manager in a very narrow sense is judged on total return, that is, his performance is measured against some standard on a total return basis and he does well if he beats it and he does poorly if he doesn't beat it. That standard is set with an eye on all of the things that keep him from just free wheeling and dealing anything he wants to in the market. At the same time, the product manager in our environment is judged on basically GAAP results which involve yield or investment income as being the driving force in what might be his profit and his bonus. I don't see any alternative to that at the moment because there is no way of doing a total return on the liability side, and it might be inappropriate because his customer wants book-value guarantees.

Nevertheless, the fact that he is aiming for a higher investment income and the fact that the investment manager is aiming for total return sometimes puts them in opposite directions. Frequently, as a matter of fact, the investment manager wants

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to do something that will sacrifice investment income. The process that we go through, this matter of establishing a benchmark saying, "That's it and you can only be this far from it," is an attempt to reconcile those two directly conflicting goals. I would like to tell you that it works all the time, but I can't.

MR. ALAN J. ROUTHENSTEIN: I just wanted to comment that I am of a group called the Insurance Strategies Group and I advise insurance companies, both actuaries and investment professionals on creating investment strategies for specific liabilities. I've seen a very great diversity as far as what different companies do. I just wanted to point out that I've noticed a lot of companies today are starting to use liability total return as a benchmark and they put together systems where they keep track of it. In a sense, the actuaries are responsible for figuring out how the liabilities are going to behave and showing under different scenarios how the liabilities will behave from the total return perspective. The asset managers use that as their benchmark, in a sense, trying to manage to increase surplus. I just wanted to make that one point.

FROM THE PANEL: So in that case you'd almost be managing the spread manager. You'd be trying to just maximize spread over the liabilities, total return of liabilities.

I just wanted to make a comment with regard to market-value adjusted annuities, just to offer an alternative to some of the comments that you made. It is possible to have a market-value adjusted annuity that is not a registered product and that is reserved at book value rather than at market value. In my company, we have designed such a product. It has a minimum return. The market-value adjustment is floored so that it will not go below a certain point, and as such it is not a security. It does not have to be registered and it does allow us to proceed on a book-value basis as far as reserving, so that would take care of one of the problems that you identified in terms of wide fluctuations in your annual return.

MR. ALPERT: I think that illustrates the possibility that when there is a difficult asset/liability question, sometimes the answer is redesigning the liability, not redesigning the assets.

MR. IAN ARTHUR GLEW: I have a question for Mr. Alpert and it has to do with benchmarking, which is something that we've been speaking about in our organization for sometime. We haven't actually got around to putting anything in place. My question is, do you actually build up a benchmark portfolio? If you do, do you take the insurance cash flows into account? If the answer to that question is, yes, how do you, from time to time, reconcile the differences that would then exist between your actual portfolio and your benchmark portfolio? In other words, you can, at the end of each year, find your actual portfolio is very different from your benchmark portfolio and your investment manager may say he really wants to start from zero base in terms of his performance for the following year.

MR. ALPERT: Do liability cash flows come in indirectly at the beginning of the process when we are evaluating various alternatives? The liability cash flows and the asset cash flows are tested through a number of different circumstances. Out of that testing we aim for a kind of standardized way of looking at the results which basically will say over all of these possible things that could happen if we put this much capital

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in then our chance of going broke is X% and our return is Y%. If we put in double that amount of capital our chance of going broke is something less than X% and our return is also something less than Y%. And we go through this analysis using both cash flows and describing it in terms of the capital requirements and capital returns, selecting a strategy that gives us the tolerable return at an acceptable level of risk and say that's it. So the cash flows do get into it. At the same time, we are also measuring how far we can be from that strategy and that defines the guidelines. If during a particular year the asset manager was at the outside range of the guidelines, he has departed as far as he could from the benchmark, then I guess it's our feeling that that's his decision, and if he did well he should be rewarded, and if he didn't do well he should be clobbered. But the guidelines are set with a view of how much risk would be tolerable. Does that answer your question?

MR. GLEW: Yes, thank you.

MR. DAVID A. HALL: We have been selling a market-value adjusted annuity product since well before it was in vogue. I believe 1983 is when we introduced our product and it's very interesting. But the product is actually much more difficult to manage the first day you sell it than it is five or seven years into the product. We, as I believe most companies selling this product, offer a range of maturities up to 10 years. We find a great preponderance of business is sold to mature in either five or ten years giving a very spiked liability profile without much filler in between. This gives the type of problem that Frank was talking about.

If you want to construct a passively managed portfolio, you need to have a zero-coupon type of performance and this can't be attained conveniently at the required yield. If you do that for several years, you find that you've got these cash flows layered in month by month by month, year by year by year and, lo and behold, one day you look at your portfolio and it doesn't look very "zero coupon" anymore. In fact, it looks very normal.

And just as a series of zero coupon liabilities can be made to look like a fairly steady stream of cash flows, you realize that traditional corporate bonds are nothing more than a bunch of zero-coupon cash payments. These can be added together to form a stream of cash flows that can be made to look like a stream of liability cash flows.

So the problem in this product is what do you do the first day when you sell your first contract and you've got only one cash flow out there to match? If you've sold a lot that day, it's a big problem. I can tell people that if you don't have much to invest, it can't be that big of a problem. It's only over time, as the book of business gets bigger, that the problem becomes easier to solve. If you get a good dispersion of business over a wide spectrum of years, your aggregate portfolio can actually be matched up a lot easier.

FROM THE PANEL: I'm glad to know there's hope.

MR. JAMES R. THOMPSON: I'd like Bob or anyone else to discuss what assumptions you used to model the prepayment risk on the Fannie Maes and the Ginnie Maes and what it's sensitive to.

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MR. GUYER: What the prepayment risk is sensitive to?

MR. THOMPSON: Yes.

MR. GUYER: The safest way to do it is to test the widest possible range you can. Actually, the mortgage market and the economic environment have changed recently. Prepayments have been very slow over the past two years. Recently they've spiked up over the past two months as you've had a lot of pent up demand.

You can look at historical data and examine how slow prepayment rates get when we had 20% prime. You could use that as a worst case scenario. But, that's ignoring a lot of other things. That's just taking account of one factor – interest rate level benches. It's not on account of demographics and other things. And for that very reason you want to test the widest range.

So what we would typically do is look at a mortgage security, a Fannie Mae at a zero prepayment rate and look at the duration. What is your yield in that case? The yield can be severely affected if you buy a deep discount or a premium. How fast can Fannie Mae prepayments get? You might want to test Fannie Mae nines at a prepayment assumption. Right now they'd be paying somewhere around 9% per year. You might want to look at 36%. What does the yield look like on that Fannie? A Wall Street has all different kinds of models regarding prepayment. What kind of prepayment rates do they forecast? They can vary dramatically depending upon which inputs are most important to that. You can use the median for all these different investment houses and say that might be the range and that's what's typically done in the mortgage market when they price a product. Whether or not prepayments come in that rate is the question. So what you want to do is test a wide enough band and see if you could live with that yield. Does it still make sense versus alternative investments? But there really is no magic. There's no magic formula for forecasting prepayments. I think the most conservative approach is to test a wide enough band and see if you're happy with the results.

MR. ALPERT: That's from an asset evaluation. Steve was talking about how the prepayment rate jumped up to 33% or some ungodly level unexpectedly.

MR. GUYER: That would be very high for a Fannie Mae.

MR. LALONDE: But it did occur. I just read it yesterday. With respect to your question about how we handle it in our model, we would enter anticipated prepayment rates and then we can accelerate that or decelerate that based on the differentials in future scenarios of interest rates relative to a current base scenario. So that, in essence, speeds up the prepayments or slows them down.