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**INNOVATION IN SAVINGS PRODUCT DESIGN**

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*Panelists will review and forecast developments in "savings" product design. An assessment of purchasing trends and developments in other countries will be included.*

MR. ALAN K. RYDER: I'd like to start off by introducing our panelists and making some brief introductory remarks. Marc Verrier is the president of Genesis Development Company. Genesis, which is based in Toronto, focuses primarily on the U.S. in the individual insurance and annuity markets. As a development company, Genesis' key areas of expertise are in the development of indexed products and also in the development of products and systems in support of the bank and broker/dealer distribution channels.

Peter Mavrogenes is a principal at the firm of Asset Allocation & Management (AAM) in Chicago. Founded in 1982, AAM is focused exclusively on the insurance industry and manages about \$7 billion of assets. Peter, to his credit, is not an actuary. He is, however, a graduate of the University of Chicago and the author of numerous articles on such topics as duration matching and investment tax strategies. Peter's day-to-day work emphasizes the management of deferred-annuity funds.

A third panelist, Roger Wiard-Bauer, had to withdraw so I will pinch-hit for Roger on somewhat short notice. I will cover some ground that Marc and Peter leave uncovered. I am the president of Intercedent Actuaries & Consultants, which is also in Toronto. We consult to life insurers on new market development matters in the U.S., Canada, and Asia. We do that by providing market assessments, advice on strategy, and assistance with the development and implementation of marketing plans and new products.

The program says that the panelists will review and forecast developments in savings products design. An assessment of purchasing trends and developments in other countries will be included. This turns out to be quite a broad mandate, and we could not cover it all, so we've been somewhat selective in what we will cover. I will make a few international comments, but there won't be much of that.

The word *innovation* implies something new and creative, and yet we tend to work in a rather stodgy, conservative, mature industry in which product developments tend to be evolutionary rather than revolutionary. However, there are forces at work to change the face of the industry, and I think during this session we'll turn over a few stones and find some interesting things happening. To start us off, I'd like to invite Marc to speak.

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\*Mr. Mavrogenes, not a member of the sponsoring organizations, is a Principal of Asset Allocation & Management in Chicago, IL.

MR. MARC G. VERRIER: We're going to talk about how the industry is in a transformation stage right now, and, in essence, the individual insurance and annuity industry is being reinvented.

First is a definitional issue. I think in our day-to-day jobs as actuaries, whether for development companies or consulting firms or insurance companies, it's becoming increasingly apparent that the product does not exist in a vacuum. In fact, the product is not just the visible end result of the customer's purchase. It also encompasses the services and the benefits that surround it, and it's important to realize that, especially as we try to identify innovations in our business.

What I set as an objective is to look at how products and services are facilitating the transformation that our industry is undergoing right now. In fact, you could argue that innovation is the process that is taking us from the old order to the new. To try to put it in perspective, you need to think about how the industry was organized, what's happening now, and try to infer from that how it will be organized. In the not-so-distant past there were what we referred to as integrated sales companies. What that means is companies that are focused on the agent and that provide all the services to that agent. As you know, many of our companies in the past were agent-driven. In the near future (in fact, there are some examples already out there), what will be introduced is what we refer to as a vertical marketing system.

Integrated sales companies will typically encompass all the services required to deliver a life insurance product. They provide capital. They provide risk management, including reinsurance. They provide investments, investment management services, administration, underwriting, marketing, sales managements, and agents. At one time, all those were under the same roof. A relatively small number of companies would still fully fit this definition. The only larger company of this type that I could think of is Northwestern Mutual. I'm sure you can think of others, but I think it has become more of the oddity rather than the norm today.

What's emerging out of that are companies that we would categorize in three ways. First, life insurance companies often now are very highly focused on specific markets and/or specific channels. Second, specialist service providers essentially provide a company with complete manufacturing capabilities. Third is the specialist marketing organization. One example of the emerging organization, and it's not going to be the ultimate example, is a company called Ford Life. With a staff of just seven people, it wrote a billion dollars of annuity premium in the first 18 months. It literally outsourced every critical function from marketing, sales, investment management and administration, and that's what we mean when we say that vertical marketing systems will emerge. In essence, Ford set up a vertical marketing system for the annuity business.

Obviously, your focused life companies will focus on generating profits in their target markets. They will have to manage risks and ensure that they generate volumes, and quality control will be important. Again, your specialist service providers will encompass everything from investment managers, reinsurers, companies providing underwriting services, and TPAs. Financial service retailers, meaning a Citibank or a Paine Weber, were not focused in any way on our business, and specialty brokers were just starting to emerge.

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They were starting to emerge in the structured settlements business. They had not yet emerged in a big way in the corporate-owned life insurance (COLI) business. There certainly were not term specialty brokers the way that there are today.

So, these are the kinds of changes that are going on. We think this will result in more companies organizing themselves into what we refer to as a vertical marketing system. In a vertical marketing system, you focus very clearly on the customer. You focus on satisfying a particular need within a particular target market and using a particular marketing concept. Then you back up from that and recruit the service providers that you need to deliver those products within the infrastructure of an insurance company. The interesting thing is that the insurance company can be one or more of the service providers or, if you recall the Ford Life example, none of the service providers.

In the past, companies had very few choices, which leads me to the issue of innovation. If your field force didn't like a product, they didn't want to go after a market, then the company backed away. That veto has essentially disappeared, and now the veto only rests with the customer. If you have a product that people will buy, and you can identify a distribution channel that will sell it, and you can show that you can make money in that market through that channel, then in all likelihood you will be able to put together this kind of vertical marketing system. We think it is very powerful and will facilitate much of the current and future innovation.

Let's turn to some of the innovations that we're seeing now. Most importantly we are seeing a great deal of product simplification. We see that as being absolutely critical for what we call nonspecialist distributors, meaning banks, stock brokerage companies, direct marketing organizations, and property and casualty (P&C) brokers. As they come into our business, they are now more quickly finding out that, in fact, they don't want to sell this product and that they don't have to take that procedure as a given. Now they want products and systems and underwriting and everything else retooled to suit their purposes. Part of that is to simplify the product. Consumer value and convenience were not the watchwords of the product development process ten years ago. We believe they are now, and they will become even more important. New delivery systems must be taken into account along with features and support services.

Rather than just give you a list of "innovations," I want to try to identify what we believe are the drivers of innovation within our industry. There are basically three categories of drivers that I will discuss in turn.

There are market-focused drivers. In other words, there is customer-focused product design and customer-focused marketing. I'll give you some examples of those. The focus there is on the market and what the market is looking for or what specific needs we can address with our products.

There are capability-focused drivers. New investment products and other by-products of specialization are driven by the insurance companies and their support organizations. I think a good example of that is indexed products. I'll talk some about indexed products, and Peter and Alan will also cover this ground. Indexed products are primarily a result of increased sophistication on the asset/liability management side, together with increased

investment product, facilitating delivery of indexed-type products to the customer. So they are much more internal and technology-driven.

Finally, there are distribution-driven initiatives. The number of initiatives today from companies tailoring products and systems and processes for the banks is truly astounding. The companies that three or four years ago would have thrown you out the door had you talked to them about bank distribution, in fact, now have bank initiatives ongoing, and they are trying to make sure that they get a piece of this market.

At the same time the wirehouse channel is much more developed. It developed faster and earlier than the bank channel, and it has different characteristics, but we're seeing continued developments in that channel. Finally, within any distribution channel you can look within product lines to find various initiatives that are essentially what we call interchannel competition. They come mostly in the form of bells and whistles and companies trying to one-up the competition to try to preserve margins.

Let's look at a few examples, starting with customer-focused product designs and simplified products. There's no question that the products that we have, the benefits that we as an industry can deliver, in terms of protection from early death or protection in the event of a late death, are significant. We, as an industry, are the only companies that can provide those kinds of benefits. At the same time, we have significant tax benefits embedded in our products if we design them a particular way. So we have the ability to satisfy certain needs very well. What is going on now is the streamlining of those products and processes to deliver those benefits very specifically and not cloud them with many issues that we may have had in the past because of the distribution channels that we were focused on. A good example of that is the Lifetime Value Series, a family of products from Aetna that target the bank customer and are to be sold through the bank to facilitate the sale of life insurance by bank staff and bank representatives.

Variable immediate annuities are starting to come out. I don't know that anyone has figured out the formula yet that will enable us to capture a significant part of the income market with that basic design, but ultimately the rewards are quite significant. I think we'll continue to see a lot of innovation there.

The free partial-withdrawal provisions, which are important to the customer and the distributor because they represent liquidity, are another area where we continue to see many developments. Ultimately, to the extent that the markets become more and more efficient, these features will start to become more expensive. So we may see those features start to decline.

As we work with new distribution channels, and as they start to understand our products they say things such as, "If it does that, why don't we try to sell it here to those people?" This brings a new element to customer focus. I think a good example of that is what we call estate planning, with a small  $e$  and a small  $p$  for middle America. Today we have planning for the affluent to help them avoid the estate tax. At the other end is essentially retirement planning, which involves largely the use of annuities to help people manage their assets in retirement. Well, what is being ignored is that the assets that aren't used in retirement will be there at the individual's death. For those assets, to the extent that they're

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in annuities, the gain will be taxed at death. We have vehicles that obviously allow that benefit to be passed onto the beneficiary income-tax-free. That's an example of a market that, may not have a new need, but it is a need that has not been exploited.

A second category of customer-focused marketing is a relatively recent development of the last two years. Banks have started buying single-premium life insurance for their own account on the basis that an asset on their books yields 6% which is taxable each year. If they can turn that into an asset-yielding 5% that's tax-free, ultimately because it's received in the form of death benefits, then that is enhancing the bank's balance sheet and income statement on a year-by-year basis. So the product has always been there, the market has always been there, but it's only in the last couple of years that brokers have started to combine the two.

The third category of changes in customer-focused marketing is to improve product features. A significant advantage that we have is the ability to guarantee income for life. We have historically embedded that benefit inside a product that is very customer-unfriendly. There are initiatives ongoing now to change this, and one product in Canada has been very successful. This product lets the customer cash out. Even though you know the customer will never cash out, providing easy liquidity in that kind of product makes a lot of sense from a customer marketing standpoint.

Looking at the capability side, in the area of new investment products, what is happening is that companies now will be using derivative instruments. As much as the "d" word is still a bad word right now, it should not be, and derivatives allow us to do many interesting things. One of the things that they allow us to do is manufacture indexed products at much less cost than it would cost, say, to develop and implement a variable product while still delivering many of the same benefits. So part of that is tied to the availability of derivatives, and part of that is tied to companies' increased sophistication on the asset/liability management side. I think that as those capabilities continue to develop in our industry, you'll see significant changes just from that alone.

You're going to see both positive and negative changes on product design. An example of a product that takes advantage of both derivatives and these more sophisticated asset/liability management techniques is the Lincoln Benefit Savers Index Annuity. The product basically allows the customer to participate in the performance of the S&P 500 while still receiving a principal guarantee. There are many other details, and Peter will get into some of the details, but there are significant benefits that you can deliver in that kind of vehicle. Another company has a product called the jump-rate rider, which is in the form of an interest rate index. To be honest, I don't recall the name of it, but in any event, there is a lot of activity going on there.

Again from the capability side, we believe teleunderwriting will become very significant in our business. Some companies now are experiencing a lot of success with that. What started off as proprietary variable annuities (the thought process being that companies had already given up the investment management revenues within the variable annuity generally), have expanded into fixed annuities. There have been announcements of a couple deals in which fixed annuities will be developed on a proprietary basis for banks and, in fact, where the bank investment manager will be managing the underlying funds.

Company direct term is a by-product of many different factors, such as increased technology and a more competitive marketplace. Also, within wirehouses are "app-less" sales in which the customer does not sign an application upfront, at the point of sale. Banks have instant-issue annuities. Again, we think of these things as innovations because they do significantly impact the process. They change the process of either building or designing or selling a product and are very important to the evolution of the business.

In the area of distribution, more specifically tailoring life products for bank sales, many initiatives are going on right now. There's no question that ultimately products will be redesigned. Marketing concepts, administration, issue, and underwriting work flows will have to be reworked in order for the product to be as successful in the banks as we believe it can be. We're going to end up with simple, highly targeted products. Again, there's a fundamental difference between how the banks are approaching this business and how agents may have approached it in the past. In the past, the company delivered the product to the agent. The agent turned around with his illustration system and told his story to the customer. The banks are different to some extent because of the heavy marketing emphasis. They step back and say, "If you want to sell this product in this market, then tell me what it's going to look like." So the process is much more transparent, and the products have to be simpler with much more servicing involved. I know of an example from Spain. It's amazing how in many of the large banks, you can walk into a branch and apply for \$100,000 of term insurance and walk out with the issued policy. We're a long way from that. A lot of work flow and underwriting and very significant issues will stop us from doing that now, but that's the ultimate objective.

As you can tell, I do believe that banks ultimately will be very successful in our business, and I think these are the key factors that tell us why. Again, the answer will not necessarily emerge in the next six months. It hasn't emerged in the last six months. It won't necessarily emerge in the next six months, but we'll get there eventually. The products and processes will be redesigned. As distribution customers of the insurance companies, they are big enough and strong enough to force this, and they will. They have customer databases that they are not afraid to use. They have already established financial relationships with their customers, which is a significant plus in terms of the customer's perception of the products to be delivered to them. Finally, I don't think that in our core business, which is the development of cash-value life insurance and annuity products, anyone has made significant use of database marketing. However, it will significantly change this business and it will enhance the other three components.

The wirehouse channel has seen several interesting developments. A new product just came out early in 1995 from The Hartford. It is a single-premium variable life insurance product that is available in either single-life or joint-life form. It is a very streamlined product. The charges are easy to explain. You don't need illustrations to go with the product, and it simply delivers the life insurance and tax benefits that are available from that kind of a product.

The other thing that we've seen in the last couple years is the increased use of syndication-type concepts. In essence, the broker dealer winds up owning, one way or another, a block of business which it then has to sell to its customers. This has proven to be a very effective

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marketing method partly because it's structuring the products and the overall sales process in a way that the brokers are comfortable with.

The last category is interchannel competition. This consumes much of the day-to-day product development activities that are going on in which companies are constantly struggling to get their margins back, to beef up their margins, and to get their market share up in different channels. The best example of this is the evolution of the death benefit provisions inside variable annuities. What started off as a nonevent has become a major focus for competition within the variable annuity product line.

In closing I want to come back to my opening remarks. There are two different extremes of how we can look at our business. One way says that innovation is a part of the everyday process of adapting our business to all the changes that are going on around us. The other extreme says that there is nothing new. I hope that what I've given you is maybe a different way to look at different product innovation and service innovations. Understanding how our industry is changing, together with how products and services are being adapted, should help you in setting your own personal and corporate strategies for dealing with these different changes.

MR. RYDER: Now I'll ask Peter to give what is basically a different perspective. I won't say an outsider's perspective, but a different perspective on product development in savings products.

MR. PETER S. MAVROGENES: I was asked to talk about some innovations in savings product design, and I thought I'd talk about a specific type of indexed product that is rather hot these days in terms of its introduction and its sales capabilities. Then I will expand this a little bit to talk about some various segments within the marketplace.

I'm an investment person, and so I have a little different perspective. Now that Marc has finished, I am the guy who comes in and throws cold water on great marketing ideas—you can't do this; you can't do that. Probably most of you are as well, but many of the features that Marc talked about are features that are very customer-friendly, customer-oriented, and that have rather severe investment considerations and implications.

I just want to briefly touch on three areas and then I'll go into much more detail on indexed annuities. The first two are just some developments that we see from our perspective as investment advisors and counselors. One, within the fixed-rate marketplace, would be CD-type annuities. These are annuities that are designed, as you all know, to look like CDs that function in a bank environment. Usually they have low surrender charges, low commission rates, in the neighborhood of 3–4%, and rate guarantee periods that match the surrender periods. You'll have a 1-, a 3-, or a 5-year rate guarantee. As sold in the U.S., these products are rather problematic from an investment perspective. They are, as I mentioned, very hot today. A number of companies have brought them out, and they're rather difficult to fund from an investment perspective because they are rather liquid annuities. I look for features in fixed-rate products that give the policyholder the access to funds. Those kind of things would include, obviously, low surrender charges, free partial-withdrawal provisions, return-on-premium guarantee, and nursing home riders. These sorts of features that give products characteristics that are undesirable from an investment perspective, are naturally

desirable from a sales and consumer perspective. These CD products have many of those features; most importantly, the low surrender charges.

When I look at fixed-income products I view them from the perspective of a fixed-income money manager. I look at them in the context of what we call the four fixed-income risks. The two important and germane risks are duration and convexity. I'm sure you all know these concepts, but we use duration as a measure of the price volatility of an asset, and we look at liabilities in that same context. Convexity is a measure of the duration drift, the second derivative of the pricing function with respect to interest rates. So a CD-type annuity has both a short duration and bad convexity characteristics because as rates rise, with a low surrender charge, liability values decline relatively quickly. In short order, the policyholder essentially has access to his or her funds. With the bonus-type annuities that are being offered today and 1035 exchanges becoming fairly easy, annuity money is relatively liquid. This means that short durations result. Today's yield curve is fairly flat, but even with a flat yield curve you give up spread and something in the form of yield spread to the curve as well.

As we look at the marketplace today, the rates that are being offered by the market for this type of deposit are too high considering the liquidity being offered. They can't be supported by the markets, and we think that they begin to border on unprofitability or at least produce very low ROEs for the issuing companies without some sort of predetermined strategy to maintain the funds for a longer period.

A different segment, and one with very different characteristics from an investment manager's point of view, is the market-value-adjusted (MVA) market. As you know, these are annuities that have a variable surrender charge as a function of whatever you want to define, usually the interest rate markets. We love these because they transfer the interest rate risk to the policyholder, allowing the company to invest with a more relaxed set of constraints. Typically in today's market, we're seeing products that have a long interest rate guarantee period and a matching surrender-charge period. So if you're going to buy a five-year MVA or a seven-year MVA, the MVA formula will apply for the guarantee period.

These are wonderful to fund because if you can define your function that drives your surrender charge properly, you can pass effectively all or most of the interest rate risk onto the policyholder, freeing your own capital for other purposes. It's a more esoteric concept, and while companies from our perspective like to issue them, they find them a little bit more difficult to sell. However, we expect to see volume pick up in this arena. Regulatory changes would appear to be pressuring the sale of this type of product, and our marketplace could become much more like Canada's where, even in the absence of regulatory pressure, the product is the dominating form of fixed-income product sold.

I want to cover the last area in some detail. It is a nontraditional product segment. We worked on a product of this type a few years ago, but it did not ultimately get to market. I want to go through how someone like me looks at a product of this type and attempts to fund it in the marketplace and identify what some of the issues are.

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We call this product the equity index annuity. I'm going to go through some of the specifications that we were given in the design phase, but in this case it was to give the upside of the S&P 500 with a guaranteed minimum return, depending upon whether it was qualifying or nonqualifying. What's important is it was nonsurrenderable. Nonsurrenderable is a great concept for an investment person for the same reasons that market-value adjustments are.

It is important to review the key specifications that were developed for the product. The first item for consideration was the fact that this was to be a single-premium product, not a flexible premium product. It would have been considerably more difficult to fund this and to sell it and to bring it to market as a flex product. So that was a simplifying consideration.

It was to be nonsurrenderable for a 5-year period, but it could be anything from 3 to 8 years, followed by a 30-day window in which the contract was to be surrenderable. At that time the policyholder would be given a renewal offer on similar terms. However, a 10% free partial-withdrawal feature (after the first year) was included which introduced some problems that I will cover later.

A return-of-principal guarantee was derived. These are always kind of risky things. I don't like to see these in products. It certainly puts a burden on the investment staff to deal with a return-of-principal guarantee, but it's oftentimes critical to sales. So we do the best we can and live with them.

The product was to be indexed to 100% of the S&P 500 gain, without dividends. It turns out that it could be any major index but the S&P 500 was the obvious choice. "No dividends" is an important consideration. The S&P 500 dividends currently yield about 2.5–2.75%. If you were going to guarantee the performance of the index with dividends, you would effectively be locking yourselves into at least a 2.50% appreciation in the event the market didn't move. Shortly I will explain how we get this equity exposure into the product; the cost of introducing that exposure with dividends is significantly more.

The product had what I would characterize as a moderate commission, 5.75%. There was talk of putting a trailer on, which was not, from my perspective, problematic.

Several options were being considered as a death benefit. Option A was an account value assuming 3% growth in the fund value. This was necessary to market into the nonqualifying marketplace. Option B was an account value assuming 0% growth in the fund. This design could be brought to the qualified market. Option C returned the account value on death, assuming actual S&P 500 index growth. Option D, where we ended up, was the greatest of either A, B, or C, depending on the design.

A few other specifications were administratively important. But the only other feature to impact pricing was the establishment of a required spread of 200 basis points.

We developed these specifications interactively with people on the sales and marketing staff and management of the company. The question was, how do you go about doing all this in a product? How do you go about funding this? I'd like to talk more about this issue.

The notion of qualifying versus nonqualifying became obviously critical because a 3% guarantee over a 5-year period was a rather significant minimum increase in the value of the policy. It is the same issue as the inclusion of dividends in the return. Obviously, the guaranteed terminal value of the 5- or 7-year product is 100% of premium with a 0% guarantee. But, the 3% guarantee required for a nonqualifying product meant that you had to provide a terminal value of almost 116% for 5 years and 123% for a 7-year product. That meant that we had to provide for that, obviously. That was a guaranteed amount regardless of where the stock market went over this period of time, and so we had to prefund that amount as a maturity value, if you will.

The obvious place to fund this terminal value was with something called U.S. government strips. These are Treasury bonds whose coupons have been clipped off, and they become zero-coupon bonds. Let's focus on the 5-year product for the moment. Five-year strips trade currently at a dollar price of \$73 per \$100 of maturity value. That's a 27-point discount, obviously, to face value on the bonds. It provides a yield of 6.42%, which is rather incidental to this whole calculation. In fact, that \$73 is, as I mentioned, rather critical. Whatever is left over is used to pay costs and provide the equity exposure.

Let's vary interest rates here just so you can see how sensitive this investment vehicle is to changes in interest rates. If rates are 100 basis points lower, the cost of the strips is almost \$77, and the price for rates down 200 is more than \$80. That discount is critical because all we're putting in place here through the strip market is the maturity value, that guaranteed return of principal that the policyholder enjoys. As rates vary, and as the price of these go up, if rates come down it provides less discount to be able to provide that equity exposure that you want in the product. Therefore, one critical variable of this whole engineering process is that interest rates have to be sufficiently high to get that discount sufficiently low or get the price sufficiently low to provide enough discount to pass along and build the upside of the equity markets to the product.

We would have preferred to not use U.S. Treasury strips. We had hoped to be able to use stripped corporate medium-term notes and thereby offer an incremental spread of 20, 30, or 50 basis points, providing more discount for use elsewhere, but that market is not very liquid. There are a few issues that satisfy those criteria, but they're not readily available and wouldn't be a suitable funding vehicle. This is particularly true if a company expects a significant volume of this product. In contrast, Treasury strips are very liquid. There are strips that go up to ten years, and there are many strips. They're very plentiful and readily available; therefore, given the cash-flow projections and the liquidity needs of this product, the U.S. Treasury market was the place to look for the primary funding vehicle.

I mentioned earlier that the partial-withdrawal feature was somewhat problematic. The problem is that earlier cash outflows need to be funded. If you compare the yield curve for November 1994 with a current one (May 1995), the difference between the one-year rate and the 5-year rate in November was 136 basis points, and today it's about 45 basis points. We have one from a rather steeply sloped yield curve to a much flatter one. Generally, the flatter the yield curve, the less it's going to cost you to provide for early cash-outs. You have to buy shorter strips to fund a partial-withdrawal feature, and that means you're going to have to spend more money if you have this feature built into the product.

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So, therefore, one of the first critical considerations in being able to engineer this product successfully is, as I mentioned, the absolute level of interest rates. The higher they are, the better it is. The second critical variable is going to be the slope of the yield curve. The flatter it is, the better it is, because you can offer a feature that you can't offer in periods where you have a very steeply sloped yield curve.

This is not a bad time to begin issuing a product such as this because of the shape of the yield curve. Even though rates have come down somewhat, you can offer the free partial-withdrawal feature more cheaply today. In 1993, when we were looking at this product, we had a slope built into the yield curve of almost 200 basis points. This made it very difficult for us to come up with attractive pricing for the product. However, in the fall of 1994 and into early 1995, we had a relatively flat yield curve coupled with relatively high interest rates. So two of the basic criteria that I mentioned as being necessary to the successful development and engineering of this product were met at that period, and we've seen a number of these products come to market as a result of that and other issues that we'll talk about in a few moments.

We've talked about funding the guarantee portion of the annuity. The question is, we still haven't touched on how to inject the equity market into this product. Well, there are a number of ways to do it. The most common way to do it is through the use of over-the-counter options. Alan is going to talk about this in a few moments, but these are options that aren't traded on any exchange. They're not regulated but are private contracts that would exist between your company and a bank. It could be a commercial bank or it could be an investment bank, people such as Goldman Sachs and Merrill Lynch, or some of the big domestic or, particularly in today's market, some of the foreign banks.

Two basic forms of options that you can use are called European and Asian options. A third type that are not done in the over-the-counter market are called American options. For our purposes, we can ignore the American options and look at the other two. In a European option the strike price represents the terminal value of the desired index on the termination date when the option expires. If you were doing a five-year equity indexed product, five years from today your option would expire, and on that day you could exercise that option. Acquiring this kind of option provides for some upside over the contract term.

The other kind of option is an Asian option. The difference between a European and an Asian option is that an Asian option provides an average return. The strike price represents an average value of the desired index over a period of time. The average can be varied in a multitude of ways. A very common form would be the average, let's say, of the last two years of the five-year period. It can be the yearly average of the S&P 500. You could take an option where, on every anniversary of the purchase date, you'd spot the S&P 500 index, average those numbers over the five-year period, and that average number would become your strike price. You would compare the strike price with the ending value of the S&P 500 and compute your gain or loss.

Longer-dated options are more expensive because you have a longer period of time for volatility to work its magic in the equity market, therefore, you pay a higher premium for a longer term. You are effectively shortening the time to expiration by having a series of

strike prices instead of one strike price at the end of the period because Asian options provide some averaging. So these options are priced considerably cheaper.

It is somewhat more difficult to market a product that's built around the Asian option because you have to explain how this process works. There are scenarios in which the policyholder may go through a rallying equity market and, if there has been some upside and downside to the market, they may end up with nothing beyond what they were guaranteed.

Let's consider the actual costs of these items. For discussion purposes, I have just illustrated two five-year designs, a European option and an Asian option that have an average of the last two years of the S&P 500. At-the-money European options on the S&P 500, without dividends, would cost \$20.75 per \$100. In other words, if you got \$100 of premium in, to allow for 100% participation in the market upside, you'd need to spend 20.75% of that premium to fully hedge yourself. But an Asian benefit that averaged the last two years would only cost 18.62%. If we averaged over all five years, the price would go down even more and might be in the 12-13% range.

That analysis is fine for the qualifying product. But what about the nonqualifying product? I computed the cost of a 16% out-of-the money option because we are going to have to guarantee 116% of the premium. The 16% out-of-the-money options cost 13.60% if European options are used and 11.64% if Asian options are used.

Let's put the analysis together. Remember, we start with a premium of \$100 and 5.75% of commission. The objective of 200 basis points of spread translates, in present-value terms, to 7.99% of initial load. This gives us \$86.26 to purchase the benefits. To fund the nonqualifying product you need to spend \$84.63 to buy the government strips. This is because you need to buy about \$116 of strips, which cost about \$73 per \$100. Now you need to buy the options to provide the market upside. For 100% participation in the market European options will cost \$13.60 and the Asian option will cost \$11.64. Clearly, the funds are not available to provide 100% of the upside. You could only offer 14% of the market upside with Asian or 12% of the market upside with European options.

There are ways of minimizing these costs. We could look at a more broadly defined average on an Asian option and get the cost of the Asian option down somewhat from the 11.64%. One very recent innovation in this product is to cap the policyholders' potential by writing into the policy a maximum return that they can earn regardless of where the S&P 500 goes. What that enables you to do is buy, say in this case, a 16% out-of-the-money Asian call option, and you would sell a 30% out-of-the-money Asian call option. Therefore, you could then translate that into a minimum and maximum return that the policyholder could receive. By selling that option, that further out-of-the-money option, you could capture some premium back, reduce your cost, and make it potentially more viable.

It's a much different analysis in the qualifying market. Because we only need to fund a guaranteed value of \$100, you can quickly see that the same analysis yields a cost that is in the ballpark. Without any changes to the options or any changes to the product you could offer 70% of the market upside with Asian options and 64% of the market upside with

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European options. By making some of these little changes in the design of the product you could actually produce, today, a product that would offer 100% of most of the upside potential, as defined, of the S&P 500. This relative difference has not changed in the two years since we did our work on this product. In fact, we quickly came to the conclusion that it was key to get a nongroup group together so you could sell the qualifying product.

We ultimately got held up on something that we did not anticipate. If you compare the yield on 5-year Treasury with that of 5-year single-A industrials during the period from January 1993 to May 1995, you will see that the corporate spreads were highest, at about 98 basis points, in June 1993. Currently, 5-year corporate spreads are in the 30–40-basis-point range. Initially, we didn't anticipate high corporate spreads being a problem. However, it ended up becoming a problem because when corporate spreads were that wide, sophisticated corporations looked for alternative sources of funds, and one of the sources of funds that the markets turned to was this product or one like it. It was a nonannuity product, but it was a competitive product nonetheless.

That summer, three products came to market. One was from Merrill Lynch called EPS notes. They were 6-year notes issued in June 1993. Through an accretion process, they guaranteed a 3.04% return to the investor, and they offered 148% of the average of the last three years of the S&P 500. Citibank also issued a product at that time called the indexed insured account. It had a 5-year maturity and had 0% minimum guarantee, but it offered twice the average performance of the S&P 500. It took me a while to figure out why we couldn't compete with these things. The answer turned out to be quite simple actually. These companies were viewing these as a source of funds. They looked at this market to produce capital at a rate that was less than the 98-basis-point spread. Through these channels they could raise money at, say, 65–70 basis points off the curve instead of the 95–100 basis points off the curve that they would have received had they just gone to market and issued a debenture. It was a cheap source of funds, but relative to what we were trying to achieve, they were prepared to effectively lose maybe 7–8% per year on this product. We needed to earn 200 basis points off this product. That spread translated into a big difference in benefits, and because of the widespread marketing of these products that summer, we concluded we couldn't actually build and bring this product to market.

Things have changed since the summer of 1993. Corporate money is now relatively cheap and there is much less ability and much less incentive on the part of corporations such as Citibank and Merrill Lynch to bring products that compete with an equity index. So a third, obviously critical, variable to add to our list of the absolute level of interest rates and the shape of the yield curve, is the absolute level of corporate spreads. In periods when these spreads are tight, you'll find less competition than you will in periods when they're wide.

You have already seen the recent development of a few equity index products. As my three conditions are now met I can confidently predict that you'll see many more. In addition, you've had good stock market performance, and policyholders are aware of that and are excited about the potential. We know of three products that have recently come to market. We know also of three that are in the process of development. I think you'll see this trend continue. It's a desirable product.

FROM THE FLOOR: I can't understand why the yield curve had such an impact.

MR. MAVROGENES: Because of the 10% free-withdrawal provision. You'll make estimates as to what the exercise ability of that option will be. Maybe 20% of the policy-holders will exercise that each year. Therefore, you need to provide for 2% of the funds available each year, and if you want to make them immune to interest rate changes, you'll have to buy a series of strips maturing in one, two, three, and four years. That means you'll be coming in on the yield curve, earning less yield on those, paying a higher dollar price. Of the three main variables, that was probably the least important, and you can change that by tweaking the free partial-withdrawal provision.

FROM THE FLOOR: Can you provide a market-value-adjustment feature to reduce the cost of early surrenders?

MR. MAVROGENES: Yes, you could, but remember it's a combination of interest rate markets and equity markets. The equity options are not very liquid. The Treasury strips are very liquid. Your MVA formula would need to tie more to interest rates than to the stock market, and you probably could not offer any kind of, say, partial performance with regard to the stock market in the MVA formula. So they would have to forfeit any kind of equity performance, and if the stock market's gone significantly up, then that is a consideration. Now could it be sold? I think that it would be hard. It is the same issue as nonsurrenderability. That's why we looked at a series, 5-10 years, and the marketing people thought that it was almost impossible to sell a ten-year nonsurrenderable. Five seemed to be a good mix. It is an attractive product. Fundamentally and conceptually the product offers no downside to the stock market, yet it does offer some potential for appreciation in a good stock market environment. So you do have that trade-off.

MR. RYDER: I'm going to comment on this product in the U.K. where it has been selling like hotcakes. In the U.K. the products are generally five-year products with surrender features that are basically market-value adjustments, including the stock options.

MR. MAVROGENES: There's a price for that, and as you get into less liquid vehicles, there's a bigger spread. There is liquidity in the stock options, but it's not significant, and you'll pay a large transaction cost to do it. I suppose you could model it, though, and maybe capture that in your MVA formula.

FROM THE FLOOR: Is liquidity sometimes offered via loans?

MR. MAVROGENES: Yes. In fact, that was discussed during our design phase. That could be offered at a price, and that's obviously a more manageable liquidity feature. You could make a spread and the company can be compensated. We discussed it but it was not included in the product because the marketing people we work with preferred the 10% free withdrawal. We said either take the policy loan or take the free withdrawal, but don't do both.

MR. RYDER: I'm going to spend most of my time discussing these index products and bringing a Canadian and U.K. perspective to the product. I want to start off with my view of the drivers of innovation in the savings product arena. Marc commented on this. He

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came at it from one perspective. I'm going to come at it from a slightly different perspective. I've identified six major driving forces behind innovation in our industry.

The first driver is technology. I think these index annuities are a good example of that. These products were basically not possible ten years ago and only began to come to market about five years ago. Here is a very good example of how technology can influence product development.

A second important driver from my point of view is what I refer to as the velocity of information. The velocity of information appears to be constantly increasing. Consumers are far more aware of what their opportunities are in virtually every market today than they were ten years ago. They will clearly be even more aware ten years from now. I'll come back to that later.

Third, we're seeing in all consumer markets, and certainly in financial services, an increasing focus on product value and product performance. Customers are making bigger and bigger demands on us and are holding us to higher and higher standards.

The fourth driver is the emergence of alternative distribution channels for financial products. We're seeing them distributed in ways that they were not being distributed ten years ago. A related driver would be competition. We're seeing competition from somewhat different places than we saw it ten years ago.

Last but not least on my list are economic market conditions which, as Peter has pointed out, can change the viability of a product in a relatively short period of time.

I'm going to cover how some of these drivers are affecting the development of savings products and, as I said before, I'm going to try to cover some ground that Peter and Marc did not. In particular, I have a few remarks on variable products and fixed-interest products sold through conventional distribution channels, but I want to start first with some more comments about these indexed products.

These products can take a number of forms. Peter highlighted one, which is basically some sort of equity participation with a guarantee of principal. They're usually single premium products, and they tend to guarantee your money back as the guarantee of principal with the stock market index performance being the variable that gets solved for.

Another application of this same technology is another single-premium product. You can create a product that offers above-market interest income, provided that the equity markets perform up to a certain standard.

A final variation on the theme is what I'll call a pseudomutual fund. This mutual fund can be based on an index and can provide quarter-to-quarter principal guarantees. If the market advances during one quarter, you get to participate in the upside but are not exposed to any downward movement. This design accommodates periodic or flexible premiums.

Now where is the value coming from in these products that allows them to be an interesting consumer product? First of all, there is the risk premium in the stock market. We all know

that over the long run, stocks tend to outperform other investment vehicles. To some degree these products are tapping that particular feature to be able to offer an attractive product design. But the other sources are, and Peter has just engineered the product for you, the use of derivatives, in particular, call options, and the use of strip bonds. We're taking financial products apart into their atomic particles and reassembling them into something that is somewhat more efficient from our point of view. Peter has pointed out that the products tend to work better in high interest rate environments. I think that that's true. However, I think that they can be manufactured in lower interest rate environments as well.

I'm going to jump ahead. We are in the process of designing such a product in Canada, and just to give you an example of what is possible, I'd like to describe that product briefly to you. As a caveat, you should understand that all of this is not directly or is even indirectly portable to the U.S. market. We do not have anywhere near the same kinds of annuity products that you have in the U.S., nor do we have minimum nonforfeiture laws and so on. We do have considerably higher interest rates, about 140 basis points higher at the moment. The product that we have on the table takes your funds and provides a guarantee of return of principal after five years. We then notionally invest 95% of the funds—that is, we apply a 5% load to the product—and we can return 115% of the market growth on those 95% invested funds. In addition, Peter has explained to some degree how this is done, a feature that's offered to the policyholder is that the index value at maturity is the average of the index over the last year. This is an Asian type of option. Peter suggested that this is difficult to sell. From our point of view it isn't necessarily that difficult to sell because the market that I think you want to point this particular product at is the risk-averse investor. This is someone who is probably not in the market today or is now getting antsy about being in the market. This is somebody who has maybe never been in the stock market or is now perhaps approaching retirement and is concerned about loss of principal. Well, one concern would be what happens if the market does very well for 4.75 years and goes into the dumper in the last three months? And so the use of these Asian options to design the product would allow you to, in fact, offer a dampened effect on market downside during the last year, six months or two years of the product's life. Given the mind-set of your likely consumer, I think it's probably a marketing positive.

There are many levers and gears you can use to play with in terms of the product design. I'd like to highlight a few of those. The first is the term of the investment. The shorter the term is, the more difficult it is, I think, to get the numbers to work out. The longer the term, the harder the sale might be. From my point of view an optimum duration is about five years. That appears to be a conclusion that Peter has reached. In fact, the products that we're seeing come to market tend to be about five-year products.

These products tend to be sold in tranches or what we call tranchettes. A tranche-type product is something akin to an offering in which the product is sold over an offering period, and all the funds are invested at once when the offering closes. That type of a sales mechanism allows for a product design that can be well documented and where good marketing materials can be developed. The tranchette has a moving part that is usually announced by the company weekly, such as the degree of equity performance or something else, and then it is sold in weekly tranches with rather standardized marketing materials and some filling in of the blanks to be done on the part of the agent.

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You have a choice of what index you want to use, and that can be domestic or foreign. It's fairly easy with these products to create foreign index exposure without creating foreign exchange exposure. It is therefore possible, for example, to have an S&P 500 index product but in Canadian dollars. I think that also has some appeal for those people who want to diversify internationally but don't want the currency risk.

There is an issue of the averaging of the index results. Should you use Asian or European options in the design? If you're going to use Asian options, do you want averaging over the entire term, or in the last six months? What do you want to do?

The degree of guarantee is a significant variable. Peter highlighted that. Offering a 3% compound return guarantee is a bit more expensive than offering no guarantee, other than return of principal.

You can play with loads, bonuses, and caps. Peter mentioned caps, but not the other two. It's possible to lock in market performance. If the market advances 10–20%, you can lock that in and create a new principal guarantee. Of course, you have a fair bit of flexibility in terms of defining your death benefits or surrender benefits.

In our opinion these are not securities in the U.S. This turns out to be not an issue in Canada. Unlike alternative products, these could be sold by life insurance agents. Now, they would have, I think, a somewhat unique market niche.

As I explained before, I think that the products have an appeal to the investor who is concerned about safety of principal. That puts the potential policyholder into two basic categories. The first is the older investor who has been comfortable in the market but now is becoming increasingly uncomfortable exposing his or her principal to loss. The second is the younger investor who is plain and simply afraid of the downside in the stock market. Now, there are many of those out there. The statistics are quite impressive in the sense that there are many people who are not in the stock market today who would like to be in the stock market if you could satisfy their concerns about a loss of principal. We like to think of this product as being somewhere on an interesting continuum. On one end of the continuum are cash and cash equivalents that offer complete security of principal. At the other extreme is the stock market, which most people would acknowledge provides an opportunity for superior returns with a significantly enhanced risk as well. As we're describing this to marketing people in Canada, we're trying to describe it as the best of both worlds; that is, you have the market upside potential with no potential for loss. We think it has a very good position in the marketplace.

I think the end result to the life insurance company is relatively minimized risks. I'll come back to some aspects of exactly what's in it for the life insurance company shortly, but a life insurance company engineering such a product can do a very good job of matching its assets to its liabilities. There is mortality risk in the product, much like variable annuity mortality risk, but it depends to some degree on the definition of a death benefit. There is a counterparty risk to whomever you are buying the options from. There is a certain sales volume risk, depending on how you structure it. But what's very important for the company is that these products, unlike variable annuities, are easy to bring to market.

These products have been selling very well in the U.K. for several years. About four or five years ago they began to appear on the U.K. scene. They've become very big sellers there for a number of reasons. If you were to visit England and open up any of the financial newspapers, you would see daily advertising for this type of product from some company trying to sell a tranche. Now there used to be very significant tax advantages in the U.K. They have an "I-E" income tax basis there, and, in fact, it was possible to manufacture these products in the U.K. such that they would generate negative tax for the life insurance company. Now that explains to some degree why they were so popular there. The company wanted to sell them, and they could in fact factor their negative tax position into the pricing. That tax loophole was closed late last year, but they're still quite tax-effective. The other aspect of the market that was quite significant was that there were significant offshore reinsurance structures. Those have also become unnecessary, given some regulatory and tax changes in the U.K., but currently there are billions of dollars of this particular product being sold.

For the most part, these products are being pushed by several big banks in the U.K. wanting to sell over-the-counter options. One bank in particular has been very successful in acquiring about an 80-85% market share. Now as we see the products in the U.S. beginning to emerge, we are seeing that this is being driven, to some degree, by the foreign banks. A recently released product came from Keyport, and the underlying securities are being acquired mainly from UBS, which is a very large Swiss bank. As I mentioned before, we're doing some work in Canada right now to develop these products, and we're, in fact, working with a U.K. bank to bring the products into the market.

One last important point is that, when you buy the underlying assets you must be very careful of the counterparty exposure that you create. You are dealing with long-dated, illiquid, volatile, derivative financial instruments. The do-it-yourself alternative looks worse to me.

That is my overview of the market, internationally, for index products. The product does seem more difficult to get going in the U.S. but I will join with Peter in predicting that you will see a great deal of this in the market soon.