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Recent Developments in Annuity Reinsurance

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Summary: Product development efforts over the past two years in the annuity market have been intense, as the line blurs between fixed and variable annuities, and as annuities respond to recent tax law changes and competition from other investments. The feverish pace has created an ideal environment for reinsurers to provide specialized services and risk management to annuity writers.

Mr. Timothy J. Ruark: David Fairhall, global manager of Annuity Products and a second vice president with Transamerica Reinsurance, is responsible for managing annuity reinsurance services for both domestic and international clients. He has extensive knowledge of the annuity market in the U.S., and 21 years of retirement benefit experience, consulting to the insurance industry in both the U.S. and Canada. He has a Bachelor of Science in Actuarial Mathematics from the University of Manitoba, and he is an FSA and a member of the American Academy of Actuaries (MAAA).

Mr. W. David Fairhall: I think that you'll find this an interesting opportunity to hear how reinsurers are looking at the annuity line of business.

As we're talking about recent developments in annuity reinsurance a lot of the things I'm talking about are, indeed, very recent developments. In fact, some of them are really just works in progress, things that we're pursuing, thinking about pursuing, and trying to figure out how to do. We'll be relaying that as we go

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Note: The charts referenced in the text can be found at the end of the manuscript.

through this. My discussions will speak to domestic, as well as international, reinsurance opportunities.

As far as domestic annuity reinsurance the three areas that I'm going to talk about today are VAs, equity-indexed annuities (EIAs), and payout annuities. I've left fixed annuities off, for somewhat obvious reasons, as Mike alluded to, due to the low-interest environment. Their sales have been going down continuously for the last two years, so we're really going to focus on VAs, EIAs, and payout annuities.

Under VAs I'm going to talk about guaranteed minimum death benefits (GMDBs), and guaranteed living benefits. I'm also going to talk about modified coinsurance. With respect to VA benefits there are really two types of reinsurance opportunities. I would characterize those as guaranteed benefits under VAs and the idea of using modified coinsurance to provide cash strain.

As far as guaranteed benefits goes there are all kinds of GMDBs, including guaranteed minimum income benefits (GMIBs), and guaranteed minimum accumulation benefits (GMABs). These benefits provide for protection on death, annuitization, or surrender. GMAB is, obviously, the new one out now and I certainly expect that it will be seeing a lot more activity as more companies add that type of benefit to their product.

Transamerica Reinsurance is a minor player in death benefit reinsurance. We have been supporting that type of reinsurance for our existing clients and do it almost like an accommodation. It was never really a market that we strategically decided to focus on; it's just something that we fell into. On GMIB we started reinsuring those and, honestly, we're now declining to quote on those. I know Michael is going to spend a lot more time talking about GMIB, so given that we're basically out of the market, I wasn't going to talk much about that.

I would suggest that on something like the GMIB, there are not a lot of reinsurers out there who are picking up the risk; therefore, I think that presents some issues for the direct companies as they're looking into that benefit. They don't have many reinsurance choices, so self-insurance becomes a possibility. Honestly, I think the companies, as they're looking at the cost, may want to reevaluate whether they want to offer that product. We certainly recognize that the product is being driven by a lot of the broker-dealers, and the distribution channel. All the other companies have it; therefore, you must have it and those are some of the issues that I see that need to be factored in for a direct company to consider.

Modified coinsurance can be used on VAs. It's a reinsurance method that allows the assets to stay on the books of the direct company. Obviously, it's staying in the separate accounts, but it is an approach that can provide full risk transfer and, at the same time, provide cash strain relief. A large VA writer and the ones that aren't doing the no-load products, which are by far the larger sales that are having to pay significant amounts of acquisition costs, can use this cash strain relief approach to help them come up with the cash to pay the acquisition costs.

A current development we've seen on this approach is an arrangement where the company only reinsured the variable subaccounts, and didn't reinsure the fixed subaccounts, and transfers were subject to a forced recapture provision. If you look at the reinsurance regulations, they don't like the forced recapture provision. So we're seeing a couple of insurance departments that are attacking that type of approach. It implies that if you want to reinsure a VA in the context of the reinsurance regulations, you really need to reinsure both the variable subaccounts as well as the fixed subaccounts.

Moving on to EIAs, the current status I'd say is that sales are somewhat less than anticipated because of a number of reasons. We have reinsured a couple of products on a combined modified coinsurance basis. This approach is essentially used as coinsurance, transferring all the assets to our books. We invest the assets, then we modify coinsurance a piece back, so the insurance company participates in a share of the profits, but we handle the investment management. I think one of the reasons for sales of this product is the market interest focusing more on VAs, and now with the idea of adding this floor protection, the GMAB, I think there will be some similar types of products, although, of course, EIAs can currently be sold by nonregistered representatives, so there is a difference.

For payout annuities, again, this is an area of development for us where we're trying to find opportunities to see what we can support. We're currently not reinsuring either terminal funding or structured settlements, but we've had some inquiries about that, so we're currently seeing if we can find ways to help those types of business out. Similarly, with single premium immediate annuities (SPIAs), we've also had interest in reinsuring blocks of business. For those first three, the terminal funding, the structured settlements, and SPIAs, clearly, the focus is on reinsuring the mortality or the longevity risk. I'm going to mention some ways of reinsuring those types of risks in a moment.

Under the variable payout annuity, this product is called variable immediate annuities (VIAs), immediate variable annuities (IVAs), or variable immediate payout annuities (VIPAs), so we're still waiting to see how the dust will settle on that

important issue. I know Michael's going to talk a lot more about reinsuring VIPAs by adding a floor to the payout, so I'm not going to spend any time on that.

My idea for a reinsurance approach there is to package an administrative solution along with a reinsurance solution. That reinsurance solution could even be modified coinsurance, so that the reinsurer is participating in some of the profits and the risks of the business going forward. The idea is to come up with a package solution, because as we're talking to companies about this type of product, their biggest concern about it is really the administrative piece. We're currently talking to some administrators, trying to find a solution to that, and we think we can help some clients to the extent that we can really come up with an administrative solution.

As far as methods of reinsuring payout annuities, clearly, you can use coinsurance or modified coinsurance and just transfer a portion of the risks in a similar fashion as the direct company's bearing. But we're getting more and more interest about non-proportional methods where it's really just focused on the longevity risk. This can include reinsuring payments over expected level for the block of business, and you define your expected basis. If the payments are exceeding that, the reinsurer picks up the excess. Also, it could be structured as payments beyond a specified duration, for example, for a specific contract beyond the life expectancy.

These are some things that we're currently looking at to see if we can find ways to do them. The payments can be a single premium up front. Then the reinsurer has some investment risk. It is really almost like a YRT-type risk, and it's based on the p's rather than the q's. There are all kinds of different angles we're thinking about and I think an important one is really just trying to understand the risk, and how much will mortality improve.

As far as international annuity reinsurance goes, the main item that we're looking at is, clearly, a focus on payout annuities, because that's how the international countries generally view annuity business. They typically don't have the same tax deferral-type aspects of our annuities, so, therefore, deferred annuities aren't really applicable. In Latin America, of course, you have the social security systems being privatized in many countries. Taiwan just announced annuity regulations there that will allow annuities for the first time. It just happened in July 1998. We've been talking to several companies in those parts of the world, and it's really interesting to hear about how those opportunities are emerging.

For example, I was just talking to companies in Mexico. They have just launched their privatized social security system and it's at a point where there's a phase-in

requirement, so right now it's only disability pensions and survivor pensions that are purchased from insurance companies. Over time the insurance companies will be able to pick up some of the retirement pensions as well.

But imagine a market where the names of the upcoming pensioners are posted on the Internet and the insurance agents get access to that immediately. People then hop on their scooters and drive to the clients as fast as they can get there, because if they're not the first four or five people to get to the prospect, they don't have a chance of making the sale, so it's literally the first person. The second agent may get there 20 minutes after the first. It's maybe just a matter of a few hours for the fourth or fifth one to arrive and by then the prospect is saying, "Oh, go away, I've talked to too many people already." It's a really interesting market to learn about.

For international annuity reinsurance, we're talking to companies about using modified coinsurance. That's a real challenge because most of the countries don't allow modified coinsurance, so they really don't understand it. We're thinking of that as a solution that would leave the assets on the books of the company and in the country, so it's something that we think their regulators are going to buy into. We think that we can work with them and with the companies, work with the departments of insurance in those countries, and work with their auditors, because their auditors tend to be the same auditors we use, so that, eventually, we'll be able to find a way of using modified coinsurance in other countries.

In Mexico, for example, they specifically put in the regulations associated with the social security annuity benefits that they could only be reinsured on a non-proportional basis. When they chose that language they weren't really trying to get away from modified coinsurance; they were simply trying to find a way to keep the assets in Mexico. It was an interesting thing to see and some of the companies we talked to there still think there are some chances for modified coinsurance to work in that country.

As far as non-proportional methods, we have already mentioned them. It's the same type of things. We're currently looking into these approaches, whether it's payments over expected levels or payments beyond a specified duration.

As far as the risk management issues, obviously, we have things like currency risk, so that's something that we're really trying to figure out how to handle. On longevity risk it's the issue of how much mortality will improve. I think our conclusion right now is nobody knows, so it's really a matter of a reinsurer determining your comfort level, what are you willing to live with? For us, it's retrocessional support. Reinsurers always are looking for retrocessional support, and I think longevity risk is a really good example of that. There's a lot of

experience in Europe right now where they spend more time thinking about longevity risk, so we're talking to reinsurers there to see if they can help us with retrocessional support on this type of risk, so we can tap into their expertise.

The other piece on the retrocessional support is as reinsurers like to not only share the risk, they also like to have their pricing validated by an outside source. I think probably all the reinsurers here would say very similar things, that we have our own management staff to answer to, so having an outside validation is often a very important piece of a reinsurance pricing exercise.

For payout annuities, an interesting issue there is verifying death. In the U.S. the companies, typically, have approaches where they'll take their payout data files and they'll compare it with records that they purchased from an outside source who has access to Social Security tax records. They'll be able to cleanse their data from time to time as people actually die.

It was interesting working in Taiwan, for example. They couldn't figure out how they were going to do it. They didn't have a mechanism set up, but they are really concerned about that. In Mexico the same issue came up and they are thinking about an approach where once a year the claimant would have to actually go to the bank or to the insurance company to get their payment so they could sign for it, so they'd get a physical verification that the person was still alive. That was really an interesting issue that has to be factored in.

Mr. Ruark: Mike Sakoulas is with Swiss Re Life and Health. He's an assistant actuary, also, an FSA and a member of the Academy. At Swiss Re, Mike specializes in nontraditional products. He designs customized reinsurance solutions primarily associated with variable, deferred, and payout annuities.

Mr. Michael Sakoulas: I'm going to talk about guaranteed living benefits within VAs. My discussion will be specifically related to income. The first part that I'll talk about is the variable immediate payout annuity, and we attach a floor to that. Swiss Re calls it a VIPA, so that's our terminology. Here the guarantee is within the payout phase. The next part that I'll talk about is the GMIB rider attached to VAs. Here the income benefit guarantee is during the accumulation phase. Finally, I just want to go over certain things that you should consider when you're talking about managing such risks.

Let's go to the VIPA. I will talk about three things here; defining a payment guarantee, and the risk characteristics of the VIPA, specifically those that drive up the costs, and finally, how one might model such a risk.

With the VIPA, we're looking at life contingent annuities. Actually, a lifetime of income is guaranteed. Now, since the annuitant is retaining all the investment risk, the level of that income is not guaranteed. I guess when you think about it with the changing demographics—baby boomers nearing retirement—you've pretty much grown accustomed to investing in equity, so you figure that in your retirement years they'd be willing to pass up some of the upside for some downside protection. The downside protection comes in as a guaranteed minimum annuity payment, or floor. Here, the annuitant receives the greater of the actual annuity payment based on performance or this floor.

How do we set up such a floor? The most popular we've seen is the percentage of the benchmark payment. What do we mean by benchmark payment? It's the initial payment determined using the applicable interest rate (AIR) and all applicable mortality and pricing assumptions. We've seen percentages vary from as low as 75% to as high as 100% and so, obviously, the greater the percentage, the more expensive the guarantee.

Another possibility is to actually have a roll-up where your floor increases every year by some specific percentage. If you want to limit the cost of this you can start off your initial floor at a pretty low level, maybe 75%, or lower, or you can limit the number of roll-ups.

The next type of floor is having a ratchet or a reset. Here the floor would reset to a percentage of the then-current payment at some nth anniversary. A ratchet is non-decreasing, whereas the reset can decrease. In order to make the reset a little bit more attractive, don't let it reset below the initial floor. As you can see, this is just an extension of the GMDB terminology.

Let's look at the risk characteristics of the VIPA. Obviously, the key driver of the cost is what your floor level is. The greater that is, the greater the risk, so, obviously, they're more expensive. But, also, as we'll see, the AIR actually has a greater effect. Let's look at a small block of business and assume everybody has a life of 20 years certain. In Chart 1 the AIR is set at 4%. Let's look at a 20-year projection. The y-axis is total annuity payments made during the year. Let's introduce a 90% floor. As you can see, it's actually claimed from years three through seven. The net return of the funds was less than 4%. It was sufficiently low that it actually ate away a 10% margin since you were guaranteeing a 90% floor.

Let's look at the same block of business in Chart 2, but we'll offer a 3% AIR instead. Everything else is the same. When we bring in the 90% floor there's one less claim, so you've actually lowered your frequency in terms of the claim's distribution. What you can also see is that those claims are actually a lot smaller, so you actually

have lower severity. Obviously, this makes sense since your AIR now is lower. It actually puts less pressure on the fund to earn an amount where your payments don't decrease.

Let's look again at the same block of business, but with Chart 3 we'll bring in a 5% AIR. What you see here, again, is a 90% floor and even greater severity just by changing the AIR to a higher amount. What you also can see is that in years eight and ten there are almost claims, so you can also increase your frequency of claims.

I guess these three charts show that there is a trade-off with AIR. If it's important to you in your product design to have a rich floor, you're probably going to have to offer a low AIR. However, if it's important for you to start off with a high benefit and you want to offer the high AIR, then you're going to have to compromise on the floor.

How might we model such a risk? Obviously, the first thing you have to do is project VA payments. This depends strictly on market performance, so you're doing a stochastic projection. You can't model something like this on an expected basis, for which you're probably not going to generate any claims.

Next let's calculate the floor. This is pretty straightforward when it's a percent of benchmark payment; however, it can get a little bit more complicated if you're offering a ratchet or a reset. Those two items determine your risk amount. It's the floor minus your annuity payment based on performance when that's greater than zero. What are my expected future floor costs? This is solely dependent upon individual annuitant mortality. Who can say what that is going into the future? It can get a lot more complicated if you offer some sort of liquidity option.

Now that we have these four items, what do we charge for something like this? You can't charge on an expected basis, because you're just not going to have enough revenue when you need it. You can't really charge for the maximum loss—it will just make things too expensive. You need to charge something in between to cover a sufficient number of scenarios, maybe 85–90% of the future. Actually, you have some pretty large exposure going out there. OK, that's all for the VIPA.

Now we can talk about the GMIB. Again, the VIPA was guaranteed during the payout phase. With the GMIB rider the guarantee is during the accumulation phase. We'll talk about similar stuff here. We'll define what the benefit is, talk about the risk characteristics, and discuss how you might model something like this.

What is a GMIB? Essentially, you're locking in your annuitization basis. This has always existed with minimum annuity purchase rates in life insurance settlement options. There you had conservative mortality and low-interest rate assumptions, and it was so conservative that it was rarely in the money unless you had a really old block of business. The additional wrinkle here is that we actually guarantee fund performance upon annuitization. Here the minimum annuity purchase rates apply to the guaranteed income base (GIB). Annuitants can elect to receive the greater of a life annuity based on the account value, based on current rates or a life annuity based on minimum annuity purchase rates, so it's not an automatically exercised option. It's up to annuitants to elect whether they want the benefit when it's in the money. Since it's not always a truly financial decision, you can take advantage of the inefficient exercise.

This can only be elected once the waiting period is over. The waiting period's usually seven years. It can be as long as ten. But I think it makes sense in your product design to offer multiple waiting periods. The reason for that is there's such a huge cost differential and you hate to charge some of your younger customers so much for some of these expensive options when the waiting period's pretty short.

GIB designs for the income base. You have roll-ups, ratchets, resets, and you probably have limitations as to age or amounts. What I think makes sense is since the income base can be defined similarly to GMDB, I think it's administratively easier if they're the same amount. This way you only have to keep track of this one value.

Let's look at the risk characteristics of the GMIB. We know it's mainly capital market risk. However, when the benefit is in the money, utilization is important. Currently, annuitization rates are running around 1%. That doesn't sound too bad, but I think we could all anticipate that in the future they'll probably be higher. The reason is that Social Security will probably be even less meaningful. We're going to increase longevity. There's even more fear of running out of money as well as all these attractive income products that are coming out right now addressing the annuitization issue. I think we could also agree that utilization's probably an increasing function of in-the-moneyness (how valuable the option is currently); however, we can assume that there's a maximum rate of annuitization that will occur in any given year.

Let's look at a block of business in Chart 4 where we set the maximum annuitization at 10%, so at any given year, no more than 10% of the people will choose the benefit even when it's in the money. Here we're looking at a 10-year projection from the end of the waiting period. The y-axis shows claims paid because of annuitization under the GMIB rider. If we bring in the average claims this doesn't

look so bad. However, one standard deviation away, the risk looks much more significant. One standard deviation away is, essentially, 80–95% of the risk depending upon what year you're in, so there's still significant risk remaining.

With Chart 5 we'll assume the maximum annuitization rate is 40%. This is possible if you get a really attractive rider where people eventually become comfortable with such benefits. Another reason utilization might increase is if you pay commissions upon annuitization. That would probably drive them up. The lighter area is the average, but look what happens one standard deviation away—you're pretty much in big trouble.

Essentially, what is your utilization sensitivity to in the moneyness? You're looking at how steep your in-the-moneyness is in an annuitization curve.

In Chart 6, let's assume there's low sensitivity. This is possible if you have a really young in-force block who are not really thinking about annuitization. Let's set the maximum annuitization rate at 25%. This is what the risk looks on average and here's what it looks like one standard deviation away.

Let's compare that to Chart 7, a high sensitivity block of business, maybe an older population who's thinking about retirement or those who are in their retirement years and looking to increase their income. This shows the risk on average and one standard deviation away. Even though you have the same maximum annuitization rate, your risk, essentially, doubles because your in force is reacting differently to the in-the-moneyness of the benefits.

What's the moral of the story here? The moral of the story is to limit utilization because there's a great unknown risk exposure out there. One thing you can do is limit the time for election within one month of the anniversary. Don't entice policyholders to take it. Don't offer the free commutation of benefits when they annuitize the GMIB rider. Someone could really take advantage of this because they can choose a life with a long-term certain period and then the next day commute and make out like a bandit. Finally, don't offer commissions on annuitization because this will have a huge effect on your utilization.

Let's look at how we model the risk. This risk is a little bit more complicated than the VIPA because there's a lot more optionality. Right off the bat you start off with projecting the account values. How do you handle new premiums, surrenders, or withdrawals? There's always transfer activity. It's clear that it has to be a stochastic projection, because on an expected basis you really can't capture the risk.

Next, let's calculate the GIB. This is pretty straightforward. It's a little bit more complicated when it's a ratchet or a reset. Project current annuity purchase rates. In order to do that you need to simulate interest rates and estimate what your individual annuitant mortality is going to be in the future. You should do some sensitivity testing on this because there's just so much talk of a potential cure for cancer. The more conservative your actual rates are in the future, the much more expensive the benefit will be.

Now that you have that information you can determine what your risk amount is and what your expected annuitization costs are. Specifically, you have to simulate this net amount at risk (NAR) variable, which is the larger of zero and the GIB multiplied by a ratio, which are your current rates over your minimum rates minus your account value. As you can see, the higher that ratio is, the more expensive this benefit is. If you're looking to guarantee annuitization at current rates, that ratio is equal to one, and it gets to be a pretty expensive benefit.

What is my expected cost? It is my NAR multiplied by my utilization. We know the function of in-the-moneyness, but it's also a function of age. Somebody who's 71 where the benefit is in the money and thinking about minimum distribution is probably a lot more likely to choose the benefit than a 50-year-old who's not really thinking about retirement for a number of years. Now that I have all that good stuff, what do I charge the customer? As with the VIPA, you have to charge enough to cover a sufficient number of scenarios.

Let's look at what we should consider when we're managing such risks. Let's face it, you're essentially writing an exotic put option, so you should look at hedging such a risk. The obvious first choice is to go the capital markets for a solution. If we bring in the three players, the contract owners, the annuity provider, and the capital markets, the contract owners are paying for a guarantee to the annuity provider, who's the writer of the option. In return they get the guarantee, whether it's a VIPA or a GMIB.

The annuity provider needs to set up a hedge, because what they're collecting from the contract holder is not always sufficient to pay for the guarantee. We go to the capital markets and, hopefully, they can construct this hedge in such a way so that what the annuity provider is collecting from the customer is enough to pay for the hedge and what they're getting back from the capital market is enough to pay for the guarantee.

It's also true that the annuity provider is immunized from the risk, but there are certain things you should consider when using capital markets. How much do I buy? What are my notional amounts? If I buy too much I'm overpaying and it's cutting into my margin. If I buy too little, there's still a huge risk exposure. And

even if I do that perfectly, I need to generate sufficient business in order to make hedging efficient. Standard & Poor's notionals run around \$2.5 million and they're even higher for some exotic options. What sort of hedge do I buy? Is it a European, an American, or an Asian? As always, there's basis risk if the guarantee's attached to actively managed funds. This is a long-term risk, so can I get long-term protection? Can I go out there and buy a 20-year hedge? I don't know about the availability of that, but I'm sure somebody will be happy to write it for you at an interesting cost.

We know option prices change fairly often, almost continuously, but the charge to the customer is essentially fixed, so what happens when my hedging becomes unaffordable? Do I let my margin deteriorate or do I just stop writing business? There are timing risks. When is my hedge paying off versus when do I actually need it?

Let's look at this from a reinsurance perspective. We have the same three players, the contract owners, the annuity provider, and the capital market. Now the reinsurer comes in as the intermediary. The annuity provider can set the charge of collecting from the customer to pay for the reinsurance premium with a lot more confidence. What they're getting back in return is, essentially, what they're promising the customer. The annuity provider is immunized from the risk. The reinsurer goes to the capital markets and sets up the hedge for his or her book of business. The reinsurers can do it a lot more efficiently because it generates critical mass a lot quicker and the reinsurer can rely on his or her own book of business for support.

Issues of using reinsurance. What sort of reserve credit am I getting? Claims limitations. There will probably be some aggregated claims limits or some per-claim limits. There are price changes, though not as often as in capital markets. There's probably a lot more administration, because you have to report claims and there could be other data requirements that the reinsurer might need to set up his or her hedging strategy.

Mr. Ruark: Potential items that I thought I could talk about as far as annuity reinsurance include the guaranteed death benefits, the GIBs, EIAs, critical illness, and the AAA Task Force on Living Benefits.

We haven't spoken much about guaranteed death benefits, yet two or three years ago this was one of the hottest topics for reinsurance and VA writers. One reason why it's not on the agenda today is that there has been a slowdown in the design innovation. Most of the death benefits, in my opinion, have hit what amounts to a retail pricing ceiling, which is probably in the 25–30 basis-point-range. If a VA

writer attempts to charge more for a death benefit, the fees appear too high and it will not be attractive to a whole lot of potential owners. What's happened then is that the design of death benefits has plateaued.

I was one of the initial people at CIGNA to work on annuity death benefit reinsurance and I'm still connected with it now and then, but, for the most part, I've seen very little innovation for the last 12 months. From my point of view, if you want a very rich death benefit that fits into the retail pricing, then you're talking about something that may roll up 5% per year and that roll-up may extend into the 80s for each individual. If you start doing too many things beyond that, you're going to start popping above that pricing ceiling. Generally, people still call and ask about some crazy benefits, such as why can't we do a 10% roll-up? You can do a 10% roll-up, but nobody will want to pay for it. You still get the questions, but it doesn't really lead to many new products because the pricing just doesn't work. As it is, also, the leading VA writer, The Hartford, has done a very good job of convincing distributors that their death benefit is the best death benefit. That message has gotten out and many companies now feel comfortable just having something that might be similar to The Hartford.

Since I brought it up, I would point out that on an expected basis I bet The Hartford benefit, which is a one-year ratchet, is one of the very best benefits out there, but it's probably misleading to suggest that it is the most valuable. Certainly, from our point of view, we price this stuff out on the tail and anything that's rolling up in the 5% range is going to produce a lot more cost on the tail than a one-year ratchet benefit. But that's between The Hartford and their distributors, so I don't get involved in that.

The higher stock allocations are also driving some of the high prices. What we have now is several years of very good stock market performance, and that means that current stock allocations are growing. We have seen cases that we wrote and reinsured three years ago where it was a very conservative allocation to suggest that 70% of their money be in the stock market or stock-related funds. Today, when that case comes back for renewal, the allocation is more in the 85–90% level and, of course, that has a significant impact on the cost of these death benefits.

There have been innovations related to death benefits, but I think it's been more on the mutual fund side. There have been a couple of prominent companies in the VA business who also run mutual funds, and they have worked to extend the death benefit concept to those mutual funds. Although it's very similar from a risk point of view with the VAs, there are some important differences, demographics being one of the main ones. The average annuity buyer is age 60, and the average mutual fund buyer is probably near age 40. In the annuity, of course, death benefits are

involuntary. You don't have to worry much about people selecting. No mutual fund that's come out with a death benefit has made it mandatory, so it is elective. How much do I care that the average age of a mutual fund buyer is 42 when I have an elective death benefit? Maybe the only people who will buy it will be the older ones.

I'll merely highlight GMIB, because unlike the death benefit, which isn't getting a ton of attention on the innovation side, this one is. The GMIB first surfaced through the Equitable's contract and I know I saw it early on and thought it was a nice little safety net, considering less than 1% of the people annuitize. This couldn't be that popular, could it? Well, *The National Underwriter* has suggested that 70% of their owners choose this benefit. This caught the industry, I think, by surprise. It's been a huge gain for the Equitable in terms of market share, but it's been annoying, I think, to some of their competitors who, a year ago, felt that they understood the VA business and how to succeed and then, out of the blue, there is a new product feature that has created some real excitement. Of course, in the VA business where you have brokers who have a dozen or more products to choose from on their shelf, anything that gives them a story on why they're recommending this particular product to the person sitting in front of them is very valuable. If nothing else, it's a story.

You now get to the point where you wonder, as Mike was highlighting, "Well, 1% per year. Boy, I couldn't reinsure enough of this stuff if I knew it was just going to be 1% annuitization." But now you've changed the nature of the game by creating value upon annuitization, so this is, in our opinion, and judging from Mike's presentation and the opinion of the Swiss Re, the real wild card in this benefit.

As such, one way to reduce the cost is for a ceding company to be willing to take a little bit of this risk. On the death benefit side, my company doesn't usually suggest a ceding company takes risk on the death benefit. It's considered to be a low-cost benefit. Nobody wants to die to receive a benefit.

With this one though, if annuitization rates are the key, I could see myself, having a discussion with a client company and suggesting that this benefit has a cost of X but X seems kind of high, and saying, "Well, I really have to protect myself on the tail and you never know, 100% of the people could annuitize." They say, "No, you can't have 100%. That's never going to happen." I say, "Well, 50% could annuitize." If I could get the client to say, "There's no way 25% of the people would annuitize in any one year," then, potentially, that's my attachment point to share risk with that ceding company. The reinsurer would say, "Yes, it's fine, if you're so sure of that and you feel comfortable with it, then why don't we work

something out where if annuitization is above 25% per year, then it's your risk. If it's under that it's mine." If the ceding company at that point says, "Yes, work me up that arrangement for a lower cost, I'm very interested," then that's very interesting to me. If the ceding company instead says, "Well there's not that much risk, I don't know why you couldn't take it." Now we're starting to think, OK you're trying to tell me that 25% annuitization is impossible and you're unwilling to take the risk, yet you're the only person who can even stand a chance to control annuitization? I can't do it.

Mike mentioned the commission schedule. That's a great motivator for getting sales or getting people to annuitize. The ceding company has control over that and I don't. If the company that has the control over or at least some control over creating incentives for annuitization, is unwilling to take the risk of what amounts to very high annuitization rates, then I'm not convinced that I should be doing it. That's something for ceding companies in the room to think about a little bit. Anything that can move annuitization rates or can spread them out over time could be very, very helpful here.

Does that mean you should limit annuitization to certain ages? That would definitely work, but it might not be that agreeable to some of your distributors. Still, I think it's worth thinking about. In our opinion, this is a great benefit. There are some companies that have complained about the Equitable's product because it has guaranteed annuitization rates in it. That's what's really being guaranteed. I tell you, though, that is exactly what they say in their prospectus. I don't know anything about what their distributors or brokers might be saying, but their prospectus is crystal clear on that. I give credit to the Equitable doing more than any other company in raising the awareness of annuitization, which is a huge, but ignored, benefit in a VA contract.

Returning to where I started today with the *The Wall Street Journal* article on fees, granted that's an early indication, but it seems to suggest, what I've been saying all along, which is you're never going to have success as a VA writer trying to compete with mutual fund companies on fees. That's not what it's about. You have much more at your disposal, like the insurance elements in a VA and annuitization. I think the GMIB is a great benefit in that respect. It's a safety net, but it's a safety net that has value in certain environments and helps to differentiate a VA from other types of accumulation products. Reinsurance capacity is certainly going to be an issue there.

There is a task force right now on living benefit. The living benefits would include the GMIB, which we talked about already, the immediate payout which is the VIPA and the accumulation benefits which is the GMAB. The AAA task force got together

to dive into some of these products because they're new and it didn't appear that they were going to go away.

In all cases, I think these products make sense. They make sense for the consumer. The insurance companies have to be very careful though not to create something that gives too much optionality to their ultimate consumer. You don't want to make something that's supposed to be low-risk all of a sudden turn into high-risk. But given that you manage that well, these products make sense. We need to get people into immediate annuities. We need to get them into income for life.

In my opinion, we need to provide lifetime income through variable products. They need protection for living too long. They need inflation protection. You can get that in a variable annuitization. Yet how do you sell that when the first month you give somebody \$1,000 and you tell them next month it isn't going to be \$1,000 except by coincidence, it could be quite a bit less? That's a very, very difficult message to give to your target audience. The guaranteed payout would seem to make perfect sense for that type of product.

So these products all make sense for the consumer. The Academy understood that. The feeling was that the products will be around and that we need to put together some documentation around them. That documentation is now available and I would encourage anybody who is thinking about living benefits on annuities to get hold of that document, because it's really very well written and it goes into all the issues of product design, non-forfeiture, and reserving.

On the reserving front, there are several different varieties, but what the Academy document suggests is that there will be further analysis of the reserving standards. The initial recommendation is to move toward something that's similar to Guideline 34, which is the old MMM, covering variable annuity death benefits reserving. The use of that type of methodology perhaps with the option and market value concept introduced there.

Many people are familiar with the work of the Equity Index Task Force. You expect the equity index option to get more and more in the money as time goes on. It's a call option. Here with a lot of these VA benefits, especially the accumulation benefit, it is a put option that is not expected to have much value as time goes on. We've tried to remind people that ZZZ, which is a good document on equity-indexed products, might not fit these type of products where these guarantees are still minor compared to the entire contract.

In terms of Guideline 34, those of you who are familiar with it, know that it revolves around an immediate drop and recovery. You absolutely should not use that type of methodology with the living benefits because you'd never have any reserve or, at least if you did, you would have a 10-year waiting period and your reserve wouldn't show up until the eighth or ninth year, which is not good. There probably will need to be some work around different modeling, the same way that it fits in the Commissioner's Annuity Reserve Valuation Method, but perhaps not using what amounts to volatility type of risk to analyze it, instead using something that's closer to under performance risk. The Guideline 34 group focused on volatility. So that's why that was the primary piece that showed up in the reserving. That's not going to be the case with living benefits.

Customers don't understand or care about things that actuaries care about. This isn't some revelation to anybody, right? We're different from most of the consumers in terms of how we think about things. That's good and bad, but it's very good to understand that. Would I spend an extra 30–40 basis points for some of these protections on an accumulation product? Probably not, but they're very, very meaningful to a lot of consumers. Given that they're meaningful, the reinsurers who are in front of you, the actuaries here, take these things very seriously because they could be designs that could create great new products. For the customer the risk makes sense.

Mr. William J. Briggs: You talked about a stipulation where the direct writer says the annuitization rate can't be more than 25% and your response was, "OK, let's agree that if it is more than 25% you take that risk." How would such an arrangement work?

Mr. Ruark: I haven't found anyone to say yes yet, but the key from my point of view and why I mentioned that is when I analyze this risk I need some way to spread this cost over future years. I need time for my version of dollar cost averaging. What I don't like about the GMIB is that everybody can annuitize at once. Sometimes the market does crash and it sometimes takes a little bit of time for it to recover. The context is we're trying to spread the annuitization. How it would actually get done I don't know. I never got that far. Do you have a suggestion?

Mr. Briggs: No, I was just curious.

Mr. Ruark: I think it can be done. I've looked over financial reinsurance contracts and if we could get two companies to agree to one of those, I'm sure we could get an agreement here.

Mr. Gregory R. Childs: I've worked on the direct side of group annuities for a number of years. Mr. Fairhall, you talked a little bit about some of the risks that are reinsured on the immediate-payout-annuity-type business. One of the things you did not mention is reinvestment risk. Is that something reinsurers are taking on or something direct companies are interested in seeing reinsured?

Mr. Fairhall: Again, I try to characterize a lot of the stuff we're looking at on payout business as a work-in-progress. But I would absolutely include the reinvestment risk as a potential for that if you're talking about coinsurance or modified coinsurance. Those approaches imply that the reinsurer is buried in the reinvestment risk the same way the direct company is. What they're looking for is a single premium to reinsure benefits beyond a certain duration. I think there are some reinsurance regulation problems with that approach, but if one could work through that, the reinsurer could take the reinvestment risk because they'd have the single premium to fund those premiums out through the years. I'm not optimistic that that approach will fall into place for us as a reinsurer, for example, but it's one of the things that's on the table and that we're looking at.

Mr. Childs: Mr. Sakoulas, on the pricing of the long tail where the direct company might be pricing 15% above the 85% you can't charge enough to cover those really bad scenarios as a direct company. I'm wondering how the reinsurer can charge enough, because if you're pooling a number of companies with similar risks, you're going to pay off, basically, in the same environment for all those companies at the same time. How do you charge or how do you spread the risks so that you don't have everybody coming to the bad scenario at the same time?

Mr. Sakoulas: Well, if you go into the capital markets for a solution here on a hedge, I'm hoping to construct it in such a way that you would get help from that when the really bad scenarios come in.

Mr. Childs: Pooling from a reinsurance perspective is just to get volume so you can go to a capital market that's more favorable?

Mr. Sakoulas: You could actually hedge a lot more efficiently because you're generating the critical mass a lot quicker, so you actually go to a capital market for a much more—I don't want to say cheaper—efficient solution.

Mr. Ruark: I would add that the motivation of option dealers, the people on Wall Street, is what Eddie Murphy said, "Just to be bookies," not to retain risk. We do price for those type of risks and we do understand that there will be durations in the future where we will lose money. The whole point of this is to not bet the entire

company on one product, and to find a way to manage that risk so that in the long run, the risk is worth taking.

Mr. Michael E. DuBois: Dave, in talking about the international annuity reinsurance, I've done a little bit of work with our subsidiary in Chile. One of the things that seems to be interesting there is that all the companies seem to follow the same outdated mortality table for pricing their annuities. How does a reinsurer deal with a situation like that?

Mr. Fairhall: Yes, it's interesting. I've spoken to some of the actuaries in Chile and, indeed, learned that their mortality tables are not really conservative enough, at least on retirement mortality, because disability seems to have more than enough conservatism. As a reinsurer, it really depends on the whole context. For example, if one is going to use modified coinsurance, then you're also factoring in the adjustment risk and the currency risk. If there are things you can take to offset the problems on the mortality, then it can work out that way. I'm not sure if I'm answering your question, but I think it's a very good one and the fact is that getting good mortality information for international risk is really very difficult.

I'll mention another example while we're on the same line. When Mexico was coming up with their mortality tables to use for their disability and survivor pensions, it was really a negotiation between their social security system and the insurance industry. The insurance industry, of course, wanted the most conservative mortality so that they would stay solvent. The social security system had to transfer government funds to the insurance company, so they wanted the least conservative. They had to settle in the middle someplace. As a reinsurer when you look at their mortality the jury's still out. They didn't have any good experience on which to base it. They did their best to make an educated guess. If you compared it with U.S. mortality, including all kinds of mortality projections, I think you would have some concerns over it. There are a lot of things that go on and, again, I'll go back to my earlier bailout—it's a work-in-progress.

Mr. DuBois: Mike, when you were discussing the GMIB and the idea of limiting utilization, one of the things that I was very surprised to hear mentioned was the possibility of having a commutation available. Is it possible to even design something like this where you have commutation available for individuals? Once they're in the money, it seems obvious that they will grab the money and run.

Mr. Sakoulas: The fact that somebody actually has to annuitize to get this benefit makes it a little unattractive. If it were possible for them to just take the money and run, utilization would be incredibly high. I'm not saying that you can't offer commutation. You could offer it, but you may have some sort of penalties or a

surrender charge, or you may lose the increase in your income. In other words, commutation will be determined based on what you would have gotten if you annuitized the account value. You can work it in, but if you leave free commutation, I definitely want to get in on your product.

CHART 1
RISK CHARACTERISTICS—VIPA AIR=4%

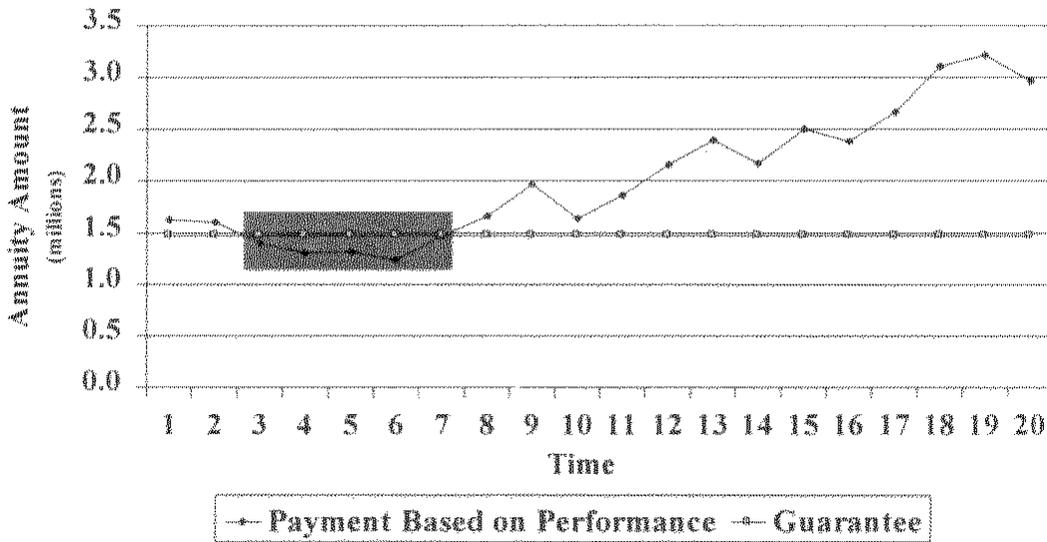


CHART 2
RISK CHARACTERISTICS—VIPA AIR =3%

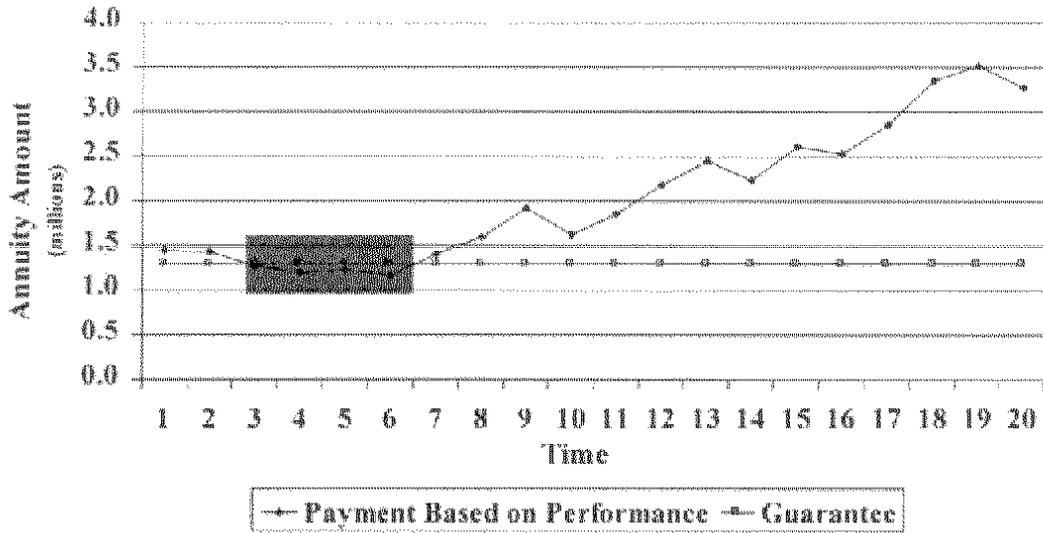


CHART 3
RISK CHARACTERISTICS—VIPA AIR = 5%

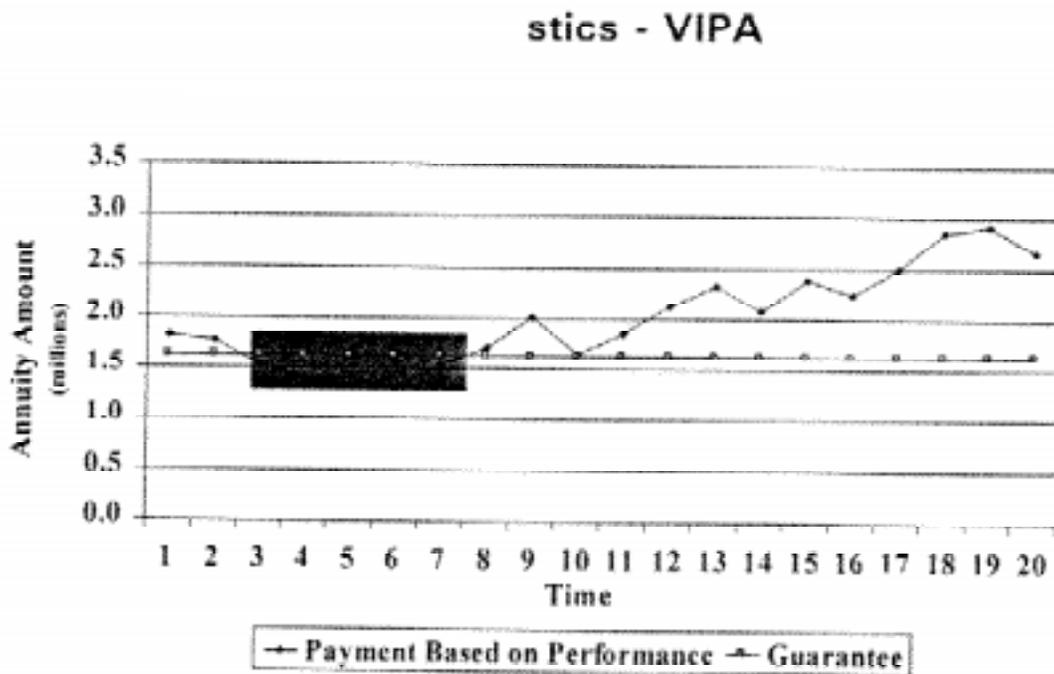


CHART 4
RISK CHARACTERISTICS—GMIB MAXIMUM ANNUITIZATION = 40%

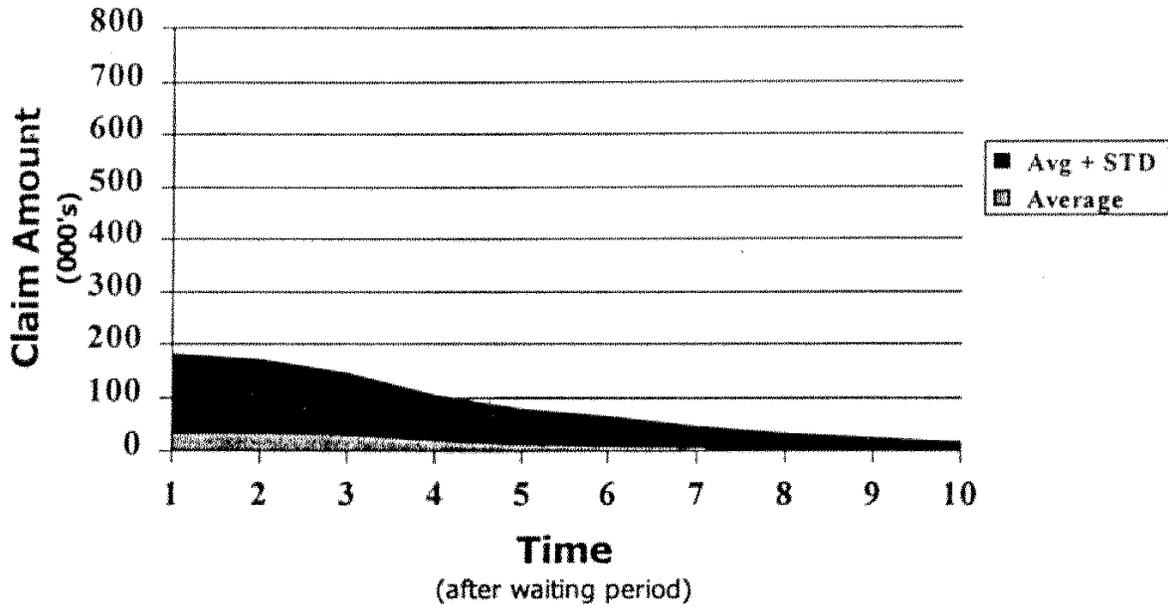


CHART 5
RISK CHARACTERISTICS—GMIB MAXIMUM ANNUITIZATION=40%

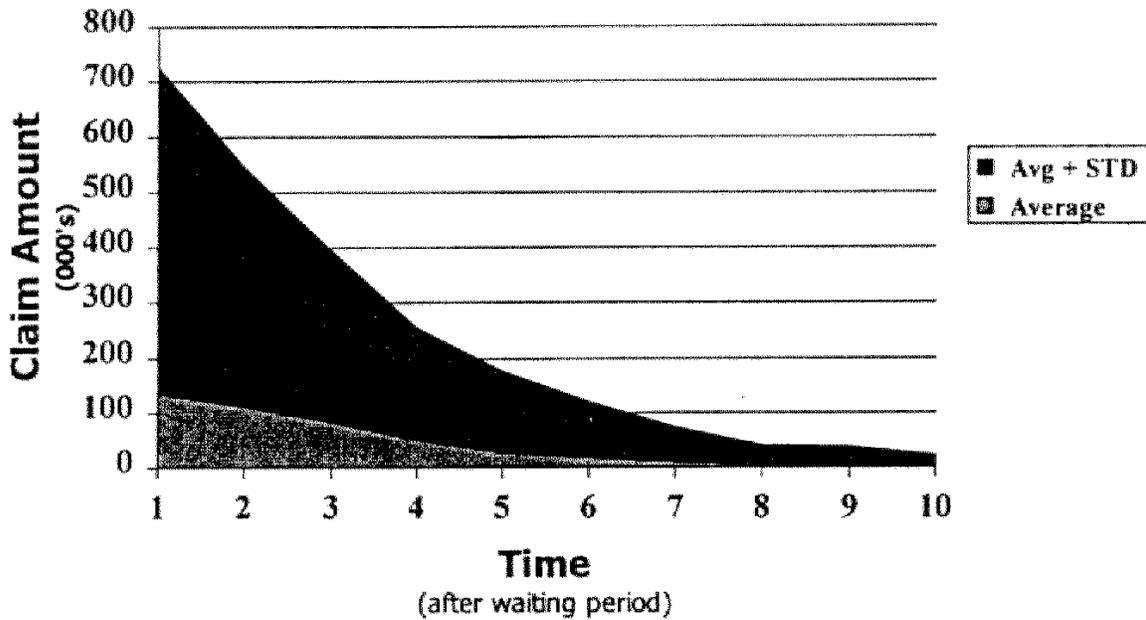


CHART 6
RISK CHARACTERISTICS—GMIB LOW SENSITIVITY/ MAXIMUM ANNUITY=25%

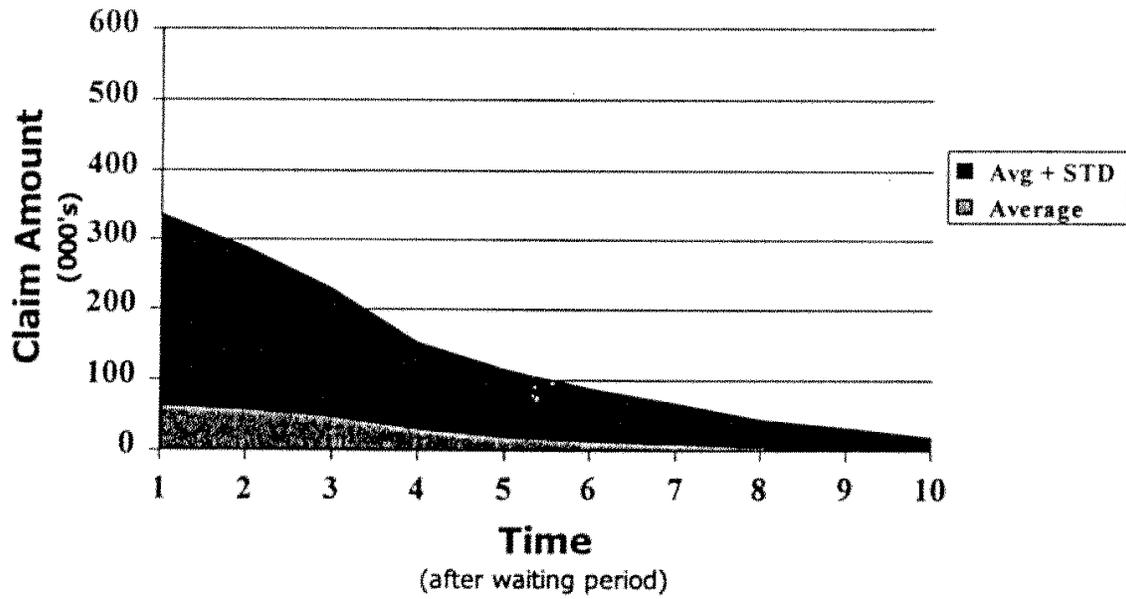


CHART 7
RISK CHARACTERISTICS—GMIB
HIGH SENSITIVITY/ MAXIMUM ANNUITY = 25%

