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Session 30OF
Impact of Current Valuation Law on Premium Guarantees

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Summary: Panelists discuss statutory valuation issues associated with life insurance premium guarantees. Topics include actuarial opinion and X-factor analysis, 2001 CSO and mitigation strategies such as product design, reinsurance and securitization.

MR. DAVID A. RICCI: I am with West Coast Life in its valuation department. With me on the dais are Carolyn Stontz, managing principal for Actuarial Resources Corporation (Arc Val) in the L.A. office, and Donald Maves, manager of actuarial services at PolySystems in Chicago. I'm going to lead off, Don will talk about XXX compliance issues, and Carolyn will talk about product design and other issues, after which I will wrap up.

We're hoping that a large portion of this session will be taken up discussing the issues relevant to this subject, which are pretty hot topics these days. We expect that many of you will participate in bringing your ideas to the floor. There's been a lot of discussion over the Web and in various Life and Health Actuarial Task Force (LHATF) meetings recently, most notably the one in Anchorage just a little while ago. It would be helpful for everyone to get different perspectives from people out there. This is not an expert-led type of issue. It deals with the core of what we're all about as actuarial professionals. We encourage you to participate at the end of the session.

I'm going to talk a little about the evolution of XXX and AXXX. Over at least a 10-year period, the regulatory industry—in cooperation with actuarial professionals—developed a regulation that would allow for a formulary development of adequate reserves on guarantee-level term products in response to some industry designs

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that were based upon YRT reserving that had proved to be inadequate. In response to that, certain product designs were developed in universal life (UL) to more or less produce the same kind of level of guarantees. Regulation AXXX was also developed in response to that. But perceiving various loopholes in the original AXXX over product redesigns, shadow accounts and secondary guarantees, the wording in XXX was modified, particularly the original introduction. It was changed to state that it's impossible to anticipate all kinds of designs that could be used to develop reserves that expressly were less than what was stated in AXXX, but that the spirit and intent of the legislation should be followed.

You may have certain doubts and questions about the applicability of such a statement, and I welcome your comments later. That's certainly where it appears that development exists currently. There are certain proposals in the industry to fix this particular issue, though some people think it doesn't need to be fixed but just needs to be enforced. I'm going to hand it over to Don now, who's going to talk about XXX compliance in general, and then Carolyn will follow him.

MR. DONALD MAVES: I'd like to talk about compliance issues. I'm going to review the methods briefly at a high level. I'm going to make some comments on the possible effects of 2001 CSO on your compliance testing. Also, I took an informal survey of some regulators from four fairly large states. I'm not at liberty to disclose which those states are or whom I talked to because they requested anonymity. During the presentation itself and at the end, we'll talk about it and summarize what I found out from that. It's an informal survey; it's anecdotal more than statistical. But the people that I talked to in the four states were all actuaries, all members of the Academy and the SOA and all actively involved and have been involved in this issue for many years. They are knowledgeable about what's going on and what the issues are.

I do want to caution you that my presentation doesn't relate solely to secondary guarantees. All the surveys I did with the states and everything I'm about to do relate to both term insurance and secondary guarantees. It applies to both, so it's not specifically secondary guarantees. If you're just writing plain vanilla term insurance, if there is such a thing anymore, most of this is going to apply to you also.

For testing the X-factors, we're going to talk about setting the initial factors, assessing the factors and then resetting the factors whenever we need to do that. The tone was set for the testing before the testing actually started, before XXX became effective. The tone for this was probably set three or four years ago by Larry Gorski, my good friend who used to be from Illinois.

First of all, in setting the initial X-factors, you need to consider all relevant experience. That involves using some actuarial judgment. What does your relevant experience consist of? If you're selling a new product that you never sold before, you may not have much relevant experience. Maybe you get it from a reinsurer or

other industry experience modified for your underwriting. Your underwriting is different from other people's. You have to make a lot of actuarial judgments when you first set these things. You may not know what your expected mortality is. You may have some feel for it, but you don't really know what it is. You need to consider all relevant experience and use actuarial judgment.

You also use actuarial judgment when you're setting your X-factor classes to determine how you would treat changes in underwriting. Your underwriting does change over the years. Underwriting is a dynamic process, not a static process. Certainly, if you go back 20 years, we're not underwriting the same knowledge we did back then, so you need to use actuarial judgment in determining this.

Let's also consider margins. What is meant by margins in our X-factors? What you would do is see what the maximum X-factors are that can be supported that eliminate deficiency reserves. Let's say we can support 40 percent. That's the maximum X-factor that will eliminate deficiency reserves. Let's compare that to our expected mortality. If our expected mortality is at 30 percent, maybe we can use 40 percent as a margin. We can justify 30 percent because we think our expected mortality is going to come in at 30 percent, but 40 percent will eliminate deficiency reserves. Using 40 percent, we eliminate or mitigate the risk of having to raise X-factors and reserves later on in the process when we've already got the policies enforced.

Suppose we could support 50 percent. We have to comply with the X-factor rules. We can't go below 20 percent. My example is a little simplistic; you probably wouldn't have one factor across the board. It would probably vary by a number of factors: issue, age, duration, plan, policy size, underwriting class, that sort of thing. But the first instinct is to see what we need to do to eliminate deficiency reserves and see whether we can support that. If we can support something greater than our expected, let's put in a margin in case future experience doesn't come out as we expect. We're going to see this all through the presentation: document what you did, why you did it, and where you got your results.

In assessing your X-factors, you need to use a statistically based method. No "hand waving." Hand waving is just saying, "It should be okay. We're fine. We don't need to do anything." In talking to companies and regulators over the years, I found that this really isn't a problem. Nobody's really hand waving; everyone is pretty much using statistically based methods. We don't have to worry about the hand waving but, nevertheless, be aware that it's there, and you can't do that.

You need to be consistent year to year. You shouldn't change from the Panjer method to the Monte Carlo method and back. You shouldn't use a three-year mortality study and then change to a five-year study. You shouldn't use a different period—go September to September and the next year go January to January. Or maybe one year you're doing it by policy year, but the next year you're doing it by calendar year. You need to be more consistent than that. It raises a red flag with

regulators. Again, I don't think regulators have indicated there's been any problem with that yet, but be aware that you need to be consistent. Consequently, it's important how you first choose to do this because it's probably the way you're going to be doing it later. Again, you need to document what you're doing here, especially now, since the regulation requires certain opinions and certain reports.

In resetting the X-factors, use actuarial judgment. What would cause us to need to use actuarial judgment? An example would be to look at the trends. Suppose in our first four years our actual mortality is at least as good as what we expected. That's great. But suppose the fifth year it turns bad. We need to use our judgment. Is that a permanent effect? What caused that? What do we think caused it? Was it a change in underwriting? Was it a change in claims practices? Was it a change in what we were marketing? Are we marketing different size policies, different agents or different types of policyholders that we have? Has our risk profile changed a little bit? You need to take that into account. Maybe it's just one fluctuation in one bad year, but you need to use judgment on that. We don't necessarily change our X-factors based on that.

For another example, let's say you have a claim that's an outlier. We got a $20 million claim this year. That's the only $20 million policy we had; everything else is $100,000. What do we do about that? It obviously affects your total experience, but you need to use some judgment. Is that something I need to take into account and change my X-factor size? I don't have the answer for you; you need to make that decision yourself. You need to consider the use of actuarial judgment.

Suppose you have 40 risk classes, and 39 of them turn out great, and one turns out badly, but in the aggregate you're okay. What do you do with that one risk class? Some people would say you need to change that risk class even though your aggregate turns out okay. Some people would say maybe you wait a little bit and see what happens on that. There are differences of opinion. All you need to remember is that you're going to have to justify your judgment to the regulators if they ask.

Use results of prior years. In other words, don't take the current year in isolation. You might have four good years and one bad year, and then you have a second bad year. You might start changing your X-factors at that point, or maybe you still think it's an anomaly. Maybe you can explain that, but again you need to use the results of prior years. You need to take into account the trends that are emerging. Again, consider margins and document. You've got to document everything you do.

I'll get into a few of the testing methods later, but the practice note on this gives three testing methods. Monte Carlo seems to be the most popular according to regulators. Some of the states indicated that all they were seeing was Monte Carlo. The second is convolutions. I'm not going to discuss that in detail because I don't think anybody is using it that I'm aware of. Also, the practice note itself says it's rather complex and time-consuming, which may be a reason people aren't using it.

The third method is called the recursive method. It's not limited to the Panjer method, though the practice note specifies the Panjer method as one of the methods you could use for recursive. It's not necessarily the only one, but there are some companies that are using the Panjer method to test their X-factors, though very few according to the regulators.

The regulators are not reviewing everybody's X-factors. They're only picking out certain filings, so they're looking at an unscientific sample. They're relying mostly on the opinion that you comply with your X-factors and all their requirements. They're not looking at every opinion and asking for the documentation or the actuarial report. They're only looking at isolated cases. They seem to be less concerned with XXX than with companies that may be on a watch list in general for their overall risk portfolio, not necessarily their term or their secondary guarantee portfolio.

For Monte Carlo, the input you need is the prescribed mortality. That is essentially the deficiency reserve mortality, or what you're using to test your X-factor. That would be, as an example, 80 CSO with the 20-year plus select factors with your X-factors as you're prescribed for your expected mortality. You also need your exposures by your various classes.

The null hypothesis that you're going to test—you're either going to accept or reject this—is that the X-factor mortality is consistent with the emerging experience by class and in total. The regulation itself doesn't say to test by class or by total, but the Standard of Practice does say that you need to do it by class and in the aggregate.

For the basic Monte Carlo procedure, we established a null hypothesis, which I just described. We simulated N times, where N is the number. I hear numbers in the range of 400 to 1,000 from the regulators and some of the companies I talked to. There may be companies going more than that; there may be companies going less. I don't know, but that is the range I hear. We rank the outcomes from lowest amount of claims to highest amount of claims, and then we accept or reject based on our rejection criteria. The rejection criteria are not set by the regulators. I suspect they have some ideas of what they want to see, but in the surveys that I've taken the rejection criteria vary a little bit. You need to set the rejection or acceptance criteria before you do the test. You can't do the test and then set the criteria and say, "We're okay if we set it at this criteria." You need to set it at what you think it should be before you do the testing.

There are two types of models for Monte Carlo in use. The individual model where you assimilate each policy involves many calculations. You need all the data for each policy issue age duration, especially face amount. Generally, those data are available for most companies, so it's not a problem. Alternatively, you could use the collective model. You group your policies into groups with similar mortality risk. If you don't have the actual policy amounts, you need to come up with an assumed

distribution of policy amounts. But generally, you would have those things, so you could use the individual model if you so desire.

That's my high-level overview of the Monte Carlo method, which in most states seems to be the predominant one. Only one of the four states indicated it had seen anybody use the Panjer method, and that was a small percentage of what it had seen. Nevertheless, I'll give you an overview of it. It's recursive calculation. In other words, we calculate the probability of no claim and the probability of the lowest amount of claims, and then the next lowest amount, and it's based on prior results. We get the complete aggregate distribution of claims from the procedure. If you'd like to see a reference on that, it's from TSA Volume 32. It's a short article, but it's intense.

One of the things to note is this method predates XXX. It started being called XXX about 1988. The Panjer method came out in about 1982, so it's not intended for XXX. The uses before XXX were probably for reinsurance—setting reinsurance retention limits and setting reinsurance stop-loss programs. It turns out it does have applicability to XXX, so we can use it.

We need the distribution of the amounts of insurance. Generally, you'll have some strange amounts. You group them into amount categories, such as $25,000, $50,000, $100,000, $250,000 and $1 million, but you'll get those odd ones, such as $99,000 and $74,000. What do you do with those? You might find that they cluster around certain amounts, or maybe they don't, so you'll have to do something different. We need the sum of the forces of mortality for each amount group, or you can use the actual QX for that group as a proxy.

The elements of the recursive calculation that I've already mentioned are grouping the policies into issue amount categories and calculating the probabilities of all combinations of claims including no claim and the lowest amount of claims. Obviously, it depends on the distribution that you have of the amounts. From those, you need to determine the complete probability density function and the cumulative distribution function, and then you can use the results to compare against your actual claims to determine whether you're going to accept or reject. Again, you need to have an accept or reject criterion before you proceed with the test.

In passing the test, the regulation, as I said, doesn't fit into this detail, but the Actuarial Standard of Practice—*ASOP No. 40*—does. You need to look at each X-factor class, and there may be multiple classes. Class may be defined by issue age, duration, face amount, policy form, risk class, smoker, nonsmoker, preferred, nonpreferred, anything that you feel determines a class. You need to look at each class separately and in the aggregate. Again, you need to use actuarial judgment. If you're failing one out of 40 classes, or one out of 100 classes, how much do you need to adjust if you're okay in the aggregate? Again, you have to consider trends here. Don't just look at one year in isolation. You might have one really good year

or one really bad year, so you need to take into account what you think is causing those trends.

A couple of observations on 2001 CSO—people have asked whether this is the panacea and whether they'll be okay as soon as 2001 CSO is approved in enough states that they can use it for their valuation. There are some things I'd like you to consider that may indicate that it's not a panacea. First of all, the complaint with the 80 CSO was that the mortality was too high for what we were experiencing. The 2001 CSO mortality is lower than the 80 CSO mortality, but we're finding in some studies—in fact, I think it was the 1995-2000 study that the SOA did—that mortality is still lower than the 2001 CSO basic table. We're seeing actual mortality that's less and, in some cases, significantly less than what we're talking about as a valuation table. Maybe it doesn't go as far as it needs to go to solve the problem.

Second, we have underwriting classes. The original plan for the 2001 CSO before it was called 2001 CSO was to do some mortality tests and derive some mortality tables by class such as preferred and superpreferred and go the opposite way, as well, to un-superpreferred, or whatever they call it. But it turns out that they had a number of problems with doing that. One, they had a lack of consistent data. They had a lack of how to define a superpreferred class. I can speak from experience on this.

When I was on the XXX task force, we considered those preferred and superpreferred classes and nonstandard classes, whatever you want to call them. There were about 12 of us at a meeting, trying to determine what a preferred class is. We had two problems. First, everybody had a different definition, so you couldn't come to a conclusion where somebody said, "You need to do this on motor vehicle records," "You need to do this on blood pressure," or "On family history, you need to do this." Everybody had a different idea.

Second, you can't really sit there, nor do you want to sit there, and tell everybody your underwriting standards: here's what we do for our preferred class. You don't want to for antitrust reasons, and you don't want to give your competitors any help or any hints. We spent about a half a day discussing it, and we finally eliminated it and said we can't come to a uniform definition of a preferred class. This goes back to the early 1990s, so you can imagine what it's like now. That was before we had a lot of proliferation of those classes. We maybe had one preferred class—one standard class for smokers and one for nonsmokers. We've got more classes now, so you can imagine the difficulty in getting the definitions uniform. It's a tough thing to do. You've got the effective underwriting classes in there, which aren't reflected in the 2001 CSO table. The 2001 CSO developers abandoned that issue for the reasons I've given: lack of data and lack of consistent data.

The final observation I want to make about 2001 CSO is the slope of the mortality. There are two issues here. One issue came up about two years ago. It was talking about the slope of the 75/80 or the 85/90 or whatever you're using for illustration

actuary purposes to determine your expected. I'm not talking about that issue where you end up essentially projecting improved mortality. What I'm talking about is the slope of mortality where it's steep enough or very steep where, for example, in duration 10 you could justify an X-factor of 40 percent, but because of the steepness in duration five, you can justify only 50 percent.

One of the problems you have is that the regulation itself says you cannot decrease X-factors by duration, so with 40 percent out in duration 10, either you've got to use 40 percent in duration five, which you may not be able to justify, or you've got to raise that 40 percent out in duration 10 to 50 percent or something higher. That's the issue on slope of mortality. You still have that with the 80 CSO table, but it may be more pronounced on the 2001 CSO, some of the issue ages depending on class, risk class, issue age, sex and that kind of a thing. It may be exacerbated in some cases by 2001 CSO. My general observation on 2001 CSO is that it's not the panacea. It may help in some cases, but it doesn't solve the problem by any means.

I'll summarize the feedback I got from the states. Again, I told them I wouldn't say who they were, so I'm just going to give my observations rather than list them. First of all, as I said, this applies to both term insurance and the secondary guarantees on UL. We did not distinguish between the two simply because they're not really looking at a lot of cases. You get the actuarial opinion on X-factors, but you also have an actuarial report. The states can ask for that, but they don't have to ask for it. I'm finding that most or all of these states are limited in what they're asking for and, again, they're not specifically looking at X-factors as a problem. They're looking more at which companies are on some kind of an internal watch list, or which companies might have problems overall. Maybe the problem is with variable products, but X-factors happen to be part of the company. They're not necessarily looking at X-factors specifically; X-factors are not necessarily generating what they're looking at. It's a limited sample of what they're looking at, so consider it anecdotal as opposed to a rigorous analysis of what they're doing.

Of the four states, in three of the states, Monte Carlo is the only method that they were using, once they indicated that there was a small percentage of people who were using the Panjer method. The rejection criteria ranged from 90 percent to 95 percent, and that was consistent across all four states. They rejected the actual claims that are greater than the 95th percentile of their scenario testing. This contrasts a little with the SOA's survey that was done after the first year that this testing was applicable. The first survey that it did found that there was a cluster at 95 percent and a cluster at 75 percent, but little in between. But remember, the SOA was surveying companies, not state insurance departments. I was informally surveying state insurance departments, and they're not looking at all the companies. It's not an apples-to-apples comparison, but we're clustered around 90 percent to 95 percent in talking to the states.

I asked the states whether any companies had raised X-factors because of their emerging experience. One state said it was aware of a couple of companies that

had done that. The other states were not aware of any companies that had done that. I asked them how satisfied they were overall with the X-factor process. The general answer I'd get was, "It's okay." They didn't say it was really great; they didn't say it was really bad. It's okay. That's what I got from all four states.

Two of the states asked me to provide them with the results of the survey from the other states after this meeting was over. If you know anything about regulators, you know that regulators do talk to other regulators in other states about issues. They could be on a task force. They could be at LATHF meetings. They could be at an NAIC meeting. They could be on a conference call. They talk there, but they also talk informally: How are you handling this problem? What is your state doing about this? The fact that two states asked me to provide the survey indicates to me that if they thought this was a problem with X-factors, they would already be talking to somebody else in some other state. That they asked for it when they could have done what I did: pick up the phone and called somebody. The fact that they haven't done that seems to indicate that either they're not having a problem with X-factor justification, or they have other problems that may be more serious that they have to be attuned to. I don't know which it is, but it doesn't seem to be a big issue with them.

One state did say to mention to the audience here that he likes it when you put margins into your X-factors. We talked about margins before, but he said make sure to tell the companies that he really loves it when you do margins. Take that for what it's worth; only one state out of the four said that. This doesn't apply specifically to secondary guarantees, but it applies to term insurance and secondary guarantees. Again, we're not seeing as much concern from the states. I think back to when the testing first came out. Some states looked at every domestic company's filings, or at least every company that was doing X-factors. They're not doing it as much now. Maybe they're comfortable with the process. Maybe they have other more pressing issues. I don't know, but that's what I found out from the states. I will turn it over to Carolyn, who will get into the product development issues.

MS. CAROLYN J. STONTZ: Thank you, Don. I'm going to change tracks a bit and talk about the product design issues associated with secondary guarantees. I want to lay some groundwork for what, hopefully, will be an active discussion following our comments.

First of all, I'll go through the outline of some typical secondary guarantee designs that are in the market today—the three major types. Then I'll move into some specific numerical examples of the application of those designs under XXX and AXXX. I'll talk about multiple guarantees and then about what comes next and where the issues are coming from that are creating all the discussion in the market today.

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As many of you know, there's been a big increase in the use of secondary guarantees. This is primarily due to the low-interest-rate environment, which is a twofold cause. First, our account values are not accumulating as fast as we thought they would because our credited rates are so low. Second, and maybe more important, the guarantees in our policy are less than 4 percent, say, 3 percent or 3.5 percent. That means that, with our guideline premium requirements, we cannot guarantee that the policyholder can put enough money into his policy to guarantee maturity when he gets out to the end of his policy. To counteract this, secondary guarantees are added to a policy. They maintain the term coverage for the life of the contract, so it goes hand in hand with the low-interest-rate environment.

This is the typical definition of a secondary guarantee: the policy is guaranteed not to lapse regardless of the amount of cash value as long as premiums requirements have been met. The most common form of a secondary guarantee today is a lifetime guarantee, where the coverage is guaranteed to remain in force for the lifetime of the policyholder subject to the requirement of payment of specified premiums. Frequently, the lifetime guarantee is offered on a stand-alone basis, although many also have it in conjunction with a 15-year guarantee, a 30-year guarantee, or some other kind of a multiple guarantee.

One of the major concerns in the industry right now is that the policy can end up being a term policy with zero cash values. This is not only because of the low interest rates and our low credited rates that we need to credit to the policyholders to make our spreads. It's also because of our required premiums, even though reservewise we use YRT premium, specified level or even a shadow account. Many companies translate those into a different set of premiums, such as term to 90 premium. Then they translate the term to 90 premium to be equivalent to the YRT premium or the specified level premium through the use of accumulation factors. That's where the problems stem from as far as the amount of premiums going into the contract or at those level term to 90 premiums, even though the secondary guarantee specified premiums are something different.

I put together some examples of the three different types of designs: the YRT, the specified level premium and the shadow account. These are illustrative only. I've run them against a UL product, which is a flexible premium general account product. It's got moderate loads. For those of you who are interested, the loads on it are 8 percent of premium, five cents per $1,000 per month and an $8-per-month administrative fee. It's a pretty low load, as some products go. It's an issue to male, preferred, nonsmoker, $100,000 face amount. My minimum guaranteed rate is 3 percent. I've done two ages—25 and 55—and two funding patterns—level and guideline single premium. I included age 25 mostly for completeness of the package, but for the purposes of today's discussion, I will concentrate on the age 55.

The first design is a level-stipulated premium design. Here, the stipulated premiums are level for the life of the insured, and they're approximately equal to the beta

Commissioner's Reserve Valuation Method (CRVM) premium. In Chart 1, the cash value is the middle line. The model reg reserve is the bottom line. The top line is the secondary guarantee reserve. The reason that you see such a disparity between the two—the specified premium reserve and the secondary guarantee reserve—is that it is basically a whole-life reserve that's accumulating. The same premiums are going into the UL product, but loads are coming out of it. That's why we have a cash value much lower than our level premium reserve. In Chart 2, you see the same product with a single premium funding, using the guideline single premium.

The second design, which is maybe the one used most commonly today, is the YRT-specified premiums. All the designs I've seen use one segment for their YRT premiums so that deficiency reserves are eliminated. Chart 3 shows the age 55 using the YRT-specified premium. Again, the level funding is at that same level used in the prior design, which is basically the beta premium level. You have your cash value, your model reg reserve, and then the YRT reserve is much lower. As you might guess, the slope of the YRT premiums after year 20 gets pretty steep.

Chart 4 shows the single premium. Here again, the cash value is the ruling value when it comes to reserve.

Let's move on to the third design, the shadow fund design. This is the design that is getting the most discussion today. I've eliminated deficiency reserves by using one segment via X-factors, and my shadow fund has a minimal amount of account value at the end of each year using specified ART premiums. On this particular design, I want to look at the age 25 as well as the age 55 and point out some of the issues that are out there. Chart 5 shows the age 25 graph. You can see that the shadow fund reserve is the ruling reserve. Those of you who have heard about shadow funds or work with shadow funds might be surprised that it is the dominating reserve. That is because in my design, at age 25 I have a no load shadow fund—like minimal load—so my shadow fund reserve ends up being the dominating one after the first few years.

Compare that one to the age 55 level funding in Chart 6. At age 55, I added some loads to my shadow fund, so the shadow fund reserve ended up being much lower than my cash value on my model reg reserve. This happens because in the operation of AXXX in item eight, there's a step that allows for the prefunding of the secondary guarantee. It's basically a ratio of your excess premiums divided by the future premiums required. If you have a heavily loaded required premium, obviously your denominator will be much larger, and you can minimize the impact of additional reserves and gain the system if you were so inclined.

Let's look at the single premium in Chart 7, which on a shadow account is still low. I still have my basic UL that [Please check slide indications below.] eserve camping along. My level premium design is [illegible] at's essentially a whole-life reserve that I've used on that design. The YRT design is following my

cash value, and the shadow fund design is a little bit higher than my cash value. Again, at age 25 I have a no-load shadow fund.

Chart 8 shows the age 55 level funding. Again, because of my whole-life design on my level stipulated premiums, that reserve is the dominating one of the three designs, and my shadow fund design is the lowest because I've used a heavily loaded design at age 55. Chart 9 shows the single-premium funding at age 55.

I'd like to talk a little about multiple guarantees and then get back to some of the issues at hand. In the XXX wording, when you have more than one secondary guarantee—be it an initial guarantee for five years or 10 years, the lifetime guarantee, a 30-year guarantee or any combination of those—you need to look at each one separately on a stand-alone basis as if the policy only had that one guarantee. Then you calculate all of your reserves and take the greatest of all of those values. An example would be a three-tier secondary guarantee: a 15-year guarantee at some premium level; if you paid more, a 20-year guarantee; or maybe even a lifetime guarantee at the third level. It can get fairly complex when you lay that on top of your underlying design level premium or YRT.

After looking at all of these designs, these are the findings. We didn't look much at age 25, but there's little variation in results by age. The variation comes from the type of required premium structure. Deficiency reserves in all of these designs are usually eliminated. The major impact is from the funding of the product. Is it funded at a level pay? Is it funded at the single premium? If you're using accumulation factors, and you have term to 90 premiums out there that are coming into a UL policy, you can fairly easily end up with no cash value, but a pretty high secondary guarantee. This is where the issues stem from—the funding of the product and what kind of premiums are coming into it. If you've used accumulation factors, your account value is zero. You still have to set up this reserve. Lots of times, depending on the slope of your YRT premiums, the reserve is out in the later duration. This is the tail risk that people have been talking about. You have not funded or set up enough reserves to fund those increases in later years. That is where the underpricing comes in that's been discussed under pricing of the term structure.

An associated item with that is the disclosure item. As on shadow funds, you have the shadow fund that has no impact on policy values. You always have to worry about the disclosure to the policyholder and what that shadow fund means. You have the same thing with these term premiums that you use accumulation factors with. Have you explained to the policyholder? He thinks he's just getting a term policy and has to pay these premiums, but when he's handed his policy, he gets these accumulation factors and the specified premiums that look totally different from what he's been told by his agent. There is disclosure concern associated with that, as well. The other item of concern comes from that overfunding, that prefunding ratio that we talked about where you can make the prefunding ratio very small through the loads in your policy.

This is evolving. There's an Academy Working Group to address the industry concerns on a long-term solution. I know many of you in the audience and I are on that working group. There is industry discussion of the economic reserve or gross premium reserve. I know at least one company addressing this issue is holding the greater of gross premium type reserves or the XXX and AXXX reserves. It's already stepped up to consider what's going to happen in later years. That brings up another point. There is a lot of discussion about the spirit of intent of AXXX. At the end of the day, you need to step back when you get your number and consider whether that is really the reserve that you feel is adequate for the risk that you're offering.

A lot of discussion in the working group centers around stochastic modeling. If you think about stochastic modeling in the past, we spent a lot of time stochastically modeling our interest rates and our returns. Now we'll be getting into stochastic modeling of policyholder behavior: the funding, the persistency and probably, more important, the mortality and how these pieces move. Are they independent of each other? Are they positively correlated? How do they interact? This is part of the long-term solution that we're looking at with the working group to pursue stochastic modeling.

I'll hand it back to you, Dave, to finish up.

MR. RICCI: Thank you, Carolyn. It's no secret that my company is fairly active in the term marketplace, We're concerned about developments in this area, particularly as they relate to reserving and capital requirements. We've been engaging various people as to the opinions concerning the viability of some of these newer designs. We have been told that there are three major regulator concerns in regard to compliance Guideline 38 as far as secondary guarantees are concerned.

First, is the secondary guarantee properly connected to the marketing materials in the intended use of the product? You have to prove to the regulator that you're not just wrapping a YRT product up in the UL product and selling it as such, as a minimum premium. There has to be reasonable illustrative material that shows the respective policyholder how it operates and why it operates in that fashion. Without that, it's going to be questionable to the regulator that there's a bona fide reason for having the secondary guarantees.

Second, consider the reasonableness of the secondary guarantee, both absolutely and relatively. Is the guarantee consistently applied across classes and ages, or is there some kind of contrivance merely to produce a reasonably low level of reserves?

Third, are the rules for definition application overly complex? Have you developed a set of three different shadow accounts with different accumulation factors? Have you produced a system that gets you where you want to go but is completely devoid of understanding by the policyholder?

Chart 10 shows some illustrative reserving methods. Our company is considering reasonable interim approaches involving economic reserves, although all of our options are open at this point. The red line is a typical literal interpretation of AXXX using shadow funds. The top line is the reserving method applying AXXX in the spirit of AXXX. The middle line is the so-called economic or gross premium valuation reserve, and this is where the problem lies. The current development of reserves by using secondary guarantees is severely deficient when compared to the economic reserve in many durations, yet the economic reserve is severely deficient when looking at the AXXX reserve. You have this dynamic occurring, which I'm sure you're all aware of.

The risk to management associated with the kind of UL product that has secondary guarantees, particularly in the current interest environment, is extremely different from what maybe had been previously considered—such items as the probability of low investment returns and how much lapse support is required. It's an extraordinary difference between a 2 percent and a 3 percent lapse assumption on this business. How can you justify whatever assumption you come up with? The mortality rate, of course, for these superselect plans is critical. There's still a long way to go as to whether the states are going to be reasonably receptive to any kind of a secondary guarantee, which they think probably masks the true obligations of the insurance company.

Capital needs are extremely critical with higher reserves. Of course, design risk is probably more important in this kind of a product than in others. I spend a good amount of time doing modeling for distribution. I learned in the process of doing that that generally distribution will find the exact sells where your lowest profits are and use it. There's usually a difference between what the pricing area assumes as being the appropriate profit and what actually emerges, and that is primarily the job of the valuation actuary to point out, usually a thankless task.

Typical mitigation strategies for securitization include offshore, onshore and reinsurance arrangements. Our company is considering a capital markets design, which involves obtaining funding from the capital markets to provide for the excess reserve over the economic reserve, a statutory basis for our XXX products. You have to have a certain amount of critical mass for this to work. It's a fairly significant amount of reserve. Anything under a billion dollars probably won't cut it in terms of being able to set up all the underwriting for this kind of an arrangement, but there are trade-offs. You don't have the letter of credit (LOC) cost you have in the standard reinsurance arrangement, plus you can take advantage of the tax impact with a carefully structured structure.

Eventually, we're going to have to work toward some kind of ultimate remedy that will bring the reserving process back into a more realistic domain. There is a good deal of argument as to whether these shadow designs with reduced reserves are in compliance. A reasonable amount of discussion on either side has been incurring in

that regard. Eventually that has to be resolved, and it has to be resolved by listening to both sides of that issue.

When the LHATF members met in June in San Francisco, they didn't discuss this issue as robustly as they have in Anchorage. They were concerned more or less with compliance in the June meeting. They discussed maybe going to the ABCD for some states to take action against actuaries who they thought were shaving reserving requirements. There was a mixture of sentiment across the board on the issue. There was a general feeling at that meeting that the current Guideline 38 was reasonably worded, and it didn't make any sense to do it over again. However, in the middle of August when they held a conference call, there was some indication that regulators were willing to consider a redraft. That redraft by New York was presented at the Anchorage meeting. In addition, they're trying to close some loopholes concerning product design. It also added a requirement for asset adequacy analysis for UL products with secondary guarantees.

In addition, at that meeting, a group of companies with the support of the Academy also discussed the appropriateness of proceeding with the ultimate solution concerning this particular product. That would involve stochastic testing and other types of reasonable economic results to determine the appropriate level of the reserves. In my judgment, that's the workable solution. It fits in nicely with the variable annuity paradigm and the way things are going, but there's a tremendous hurdle to get over. With variable annuities, you have the equity markets, and it was almost a necessity to go to a stochastic measurement. But in this particular case, you're talking about something where regulators never considered going beyond the formulaic approach that they have now. It will be interesting how that all works out. I definitely am rooting for the group.

At this point, I'd like to turn the session over to you to ask what kind of questions you have concerning this topic.

FROM THE FLOOR: I'll start, Don, with your 2001 CSO. Consider the slope of the mortality table and the problem that you said is associated with the requirement that the X-factors can't be reduced in size. Is there some way that you can offset sufficiencies with deficiencies and still get around the issue?

MR. MAVES: That's where the actuarial judgment would come in, I suspect, because you could have isolated issue ages for durations where you have a problem, but maybe your class as a whole is okay. That would be something that you would have to justify to your regulator but, again, I don't think they're really looking at that. It's more of a professional responsibility to do that. You could certainly consider that, but how you justify it depends on your data, your experience and how your overall testing comes out. So, yes, it's possible.

FROM THE FLOOR: But difficult.

MR. MAVES: Again, it would depend on the circumstances. In some cases, it may not be so difficult but, yes, it could be difficult.

FROM THE FLOOR: Suffice it to say the additional increase in slope provides an additional challenge to being able to produce a reasonable set of X-factors.

MR. MAVES: I think so because when that criterion was first put into the regulation, I don't think a lot of people thought about the consequences. Now they're finding out that there are consequences that are in some cases serious that they didn't realize were serious before.

FROM THE FLOOR: I'm interested in hearing from the group in terms of the three alternatives that it was discussing in Anchorage. One was this Academy solution. There was another offered by Ed Robbins that had to do with an attained-age reserving method. I'm not familiar with it, but if there's anybody in the group who would like to discuss that or knows a little bit more about it, please feel free to discuss it with the group. Then there's the Carmello New York proposal, which is basically taking the current Guideline 38 and making it a bit more explicit, trying to close loopholes. I'm a little skeptical that it's ever going to be able to do that completely.

MR. COREY OLSEN: I work with Ed Robbins, and I could give you a little more background on what was presented. It was to use the attained-age-level reserve method. It's the same type of method that's in Actuarial Guideline 37 for variable life with secondary guarantees. Because the UL with a secondary guarantee is more akin to the variable life with a secondary guarantee, as opposed to a term product, it would create the level funding over the entire secondary guarantee period. It would self-correct as it went along. It would take into account and look at the death benefits that are not reserved for elsewhere such as under the UL model reg.

FROM THE FLOOR: Thank you for that explanation. When you think about it, it makes sense to consider that as a viable alternative because that's what you're dealing with. You're dealing with variable life without the equity changes—the same kind of thing, and then you wouldn't have to deal with some of the nuances concerning the stochastic measurement that you would in the Academy proposal.

MR. RANDY FRIETAG: I want to clarify: there were three proposals in Anchorage. One was the New York proposal, another was Corey and Ed Robbins's proposal of attained-age-level reserve, but the third was not an Academy-driven proposal. It was sponsored by 10 companies that had developed the approach, and that was the approach that called for asset adequacy analysis.

I also have a comment on some of the presentations. As you may know, we issue a shadow fund product. We find that the shadow fund has some risk mitigation ability. That's why we like that design. We do not come up with the sort of reserves that your demonstrations come up with—those differences between a whole-life

reserve and a shadow fund calculated reserve. I don't know what assumptions you're using, but I find them to be deceiving because it's not what we find as a company that uses a design like this.

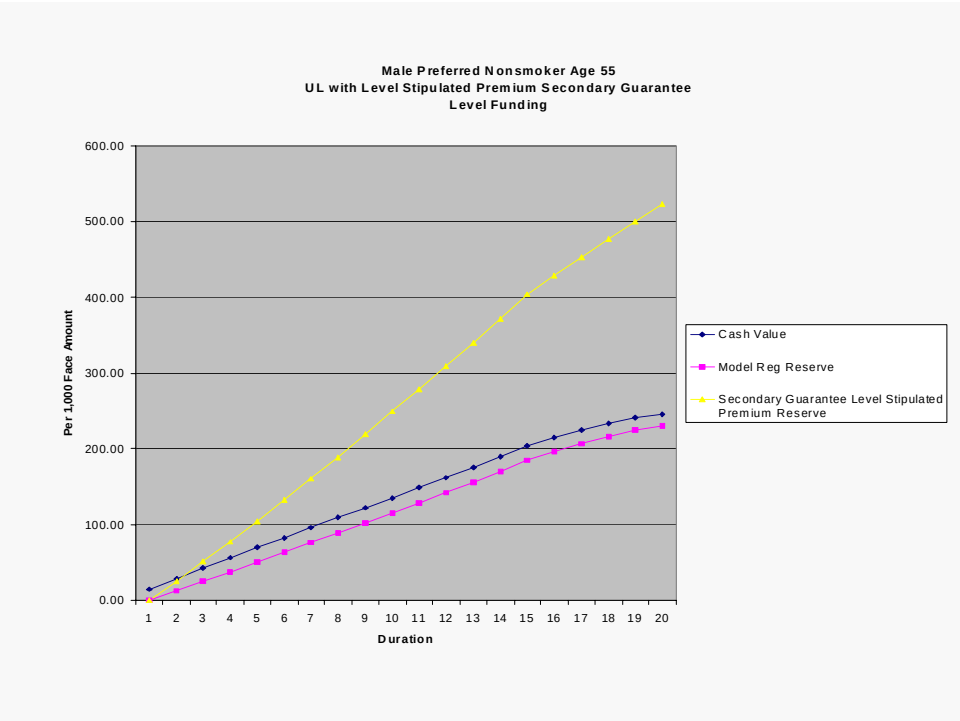
MS. STONTZ: Yes, the purpose of my example was to illustrate all the moving parts, and how you can get a variety of different answers depending on which design you use, what your underlying product is and the level of funding.

MR. FRIETAG: I'd like to make one other comment about the three methods that were outlined here and talked about in Anchorage. There appears to be some sentiment—not just recent, but constant over a period of time—to leave everything as it is and let each state enforce it individually. There's also some sentiment from some of the states to do that. In other words, the mechanism is there to do that; let each state do that. I don't know whether that's going to be the final solution, but there's some resistance to changing AXXX. There's some resistance to the Carmello method.

One of the things to note about Anchorage is that some key states like California and Florida weren't even there, so when they have their input, who knows what's going to happen and where they will come down on the issue. We've seen some states change their mind on this issue. What happened in Anchorage isn't necessarily what's ultimately going to happen. There is some sentiment for doing nothing, but I don't know if that will carry the day or not.

UNIDENTIFIED PANELIST: Thank you for that clarification, Randy. I stand corrected. This was a proposal that has 10 signatures on it. What I meant to say was that as part of the proposal they encouraged the continuation and the support of the Academy working forward in that document, not that the Academy was sponsoring their recommendations. They also support requirements of adequate reserves as a solution going forward. They are as concerned as any other group about abuses that could be generated by using inadequate reserve approaches to products.

Chart 1



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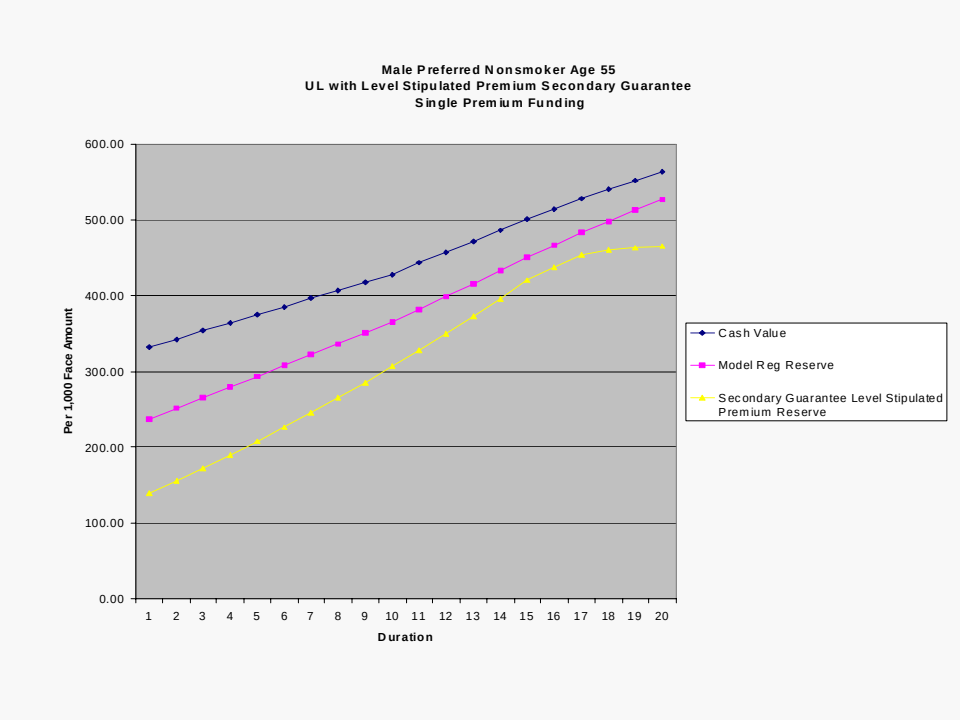

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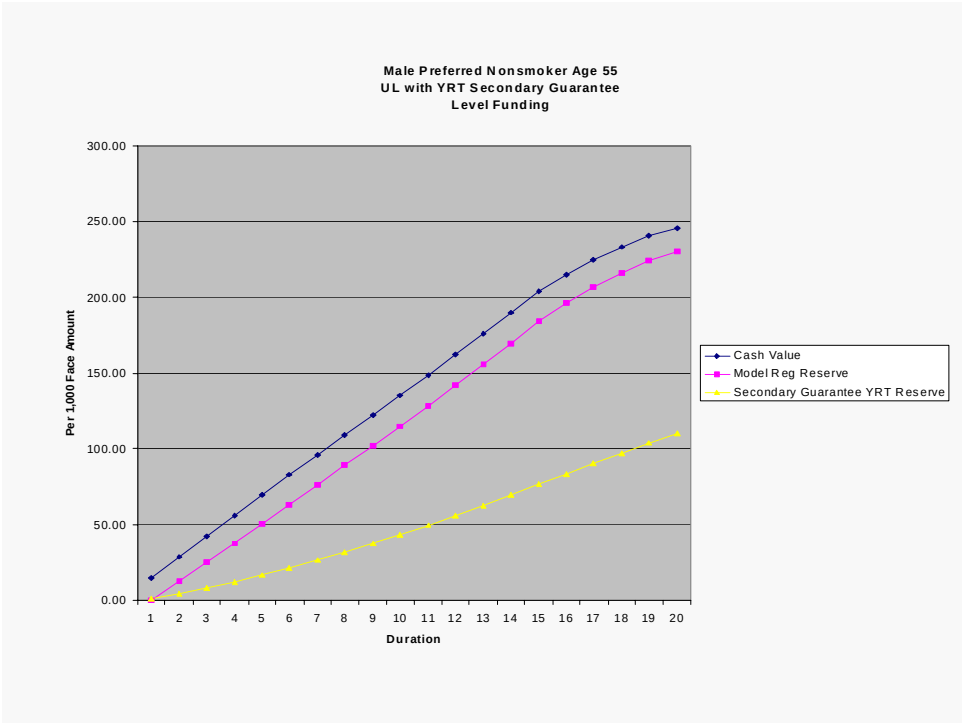

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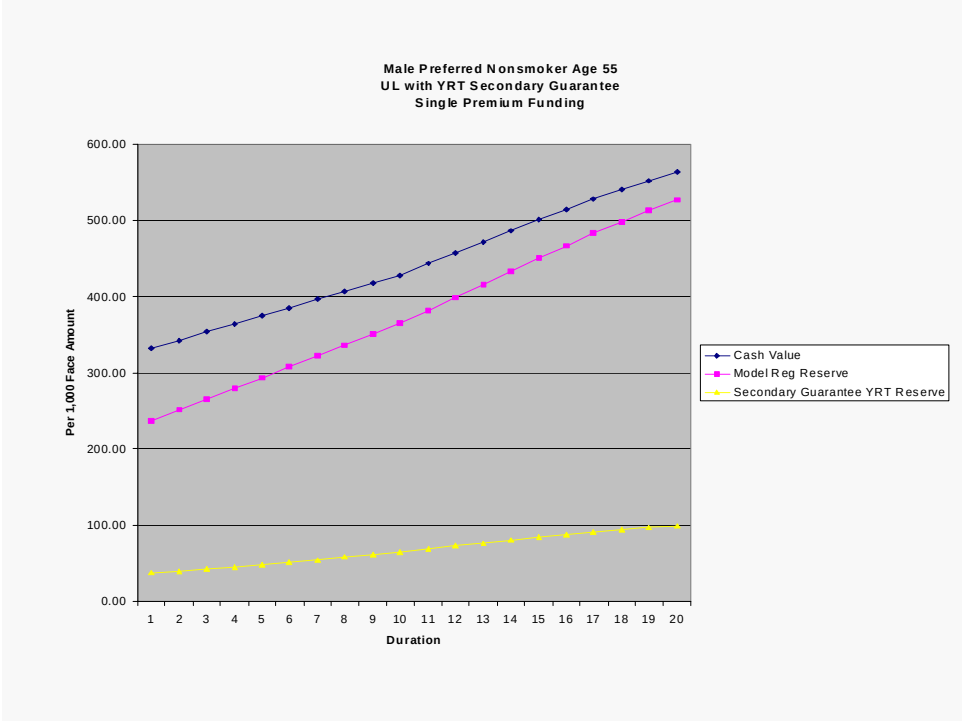

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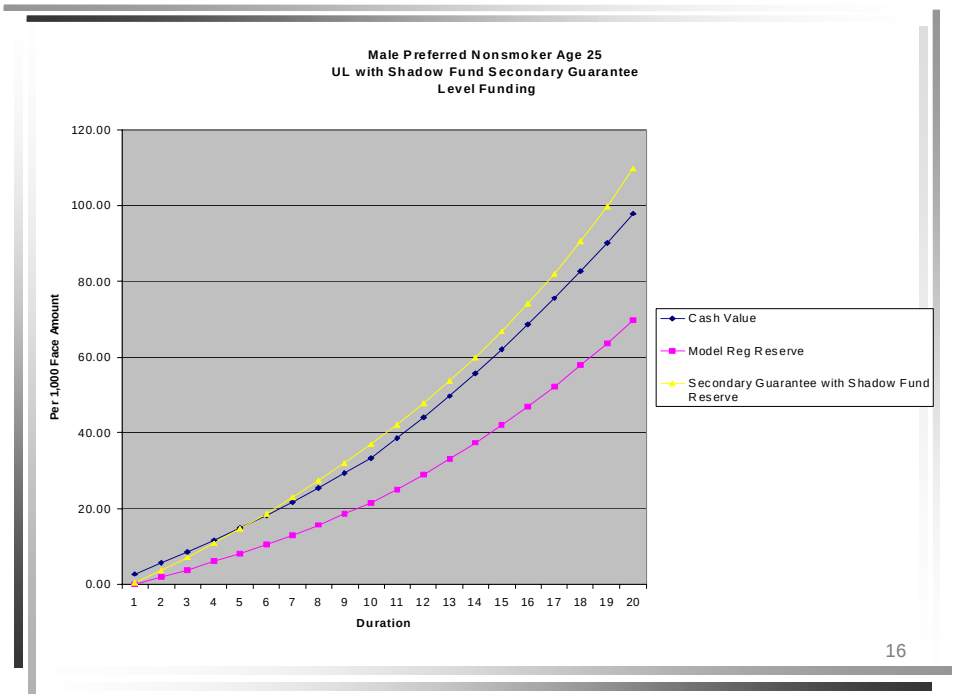

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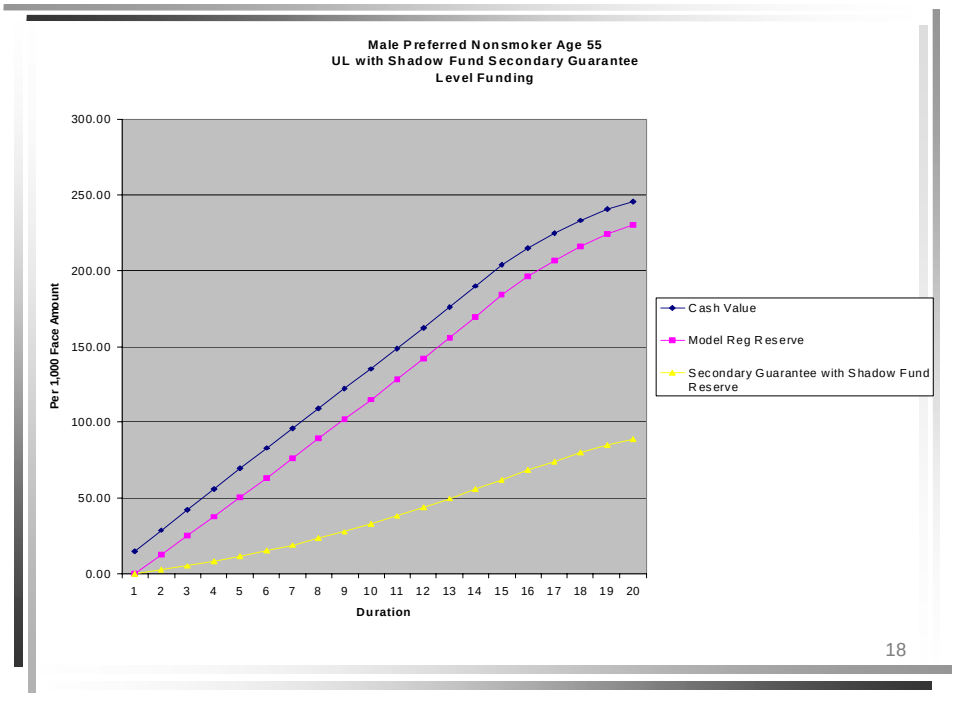

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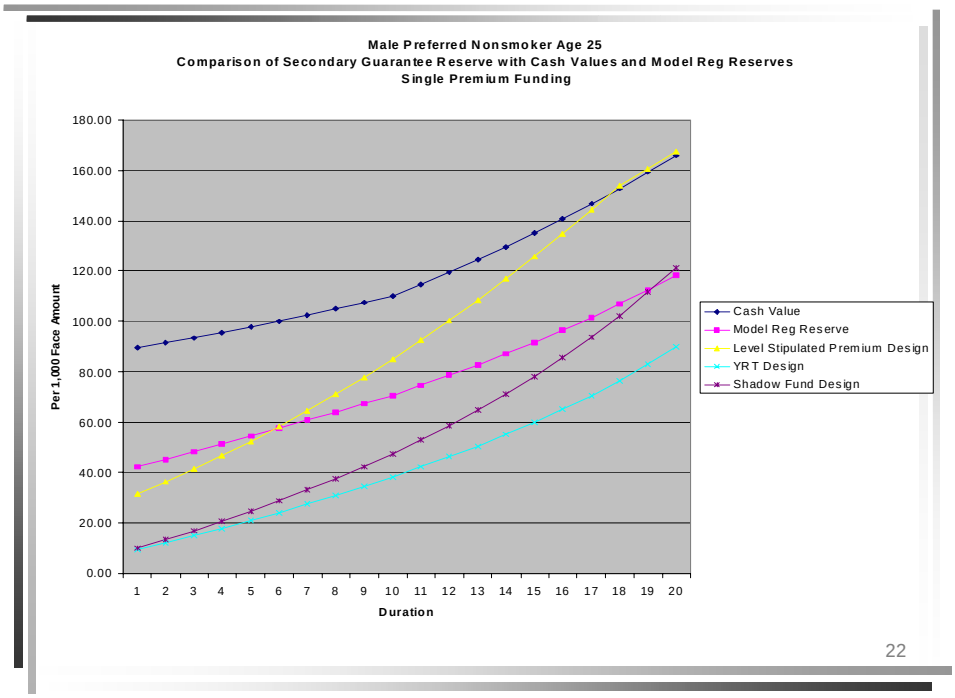

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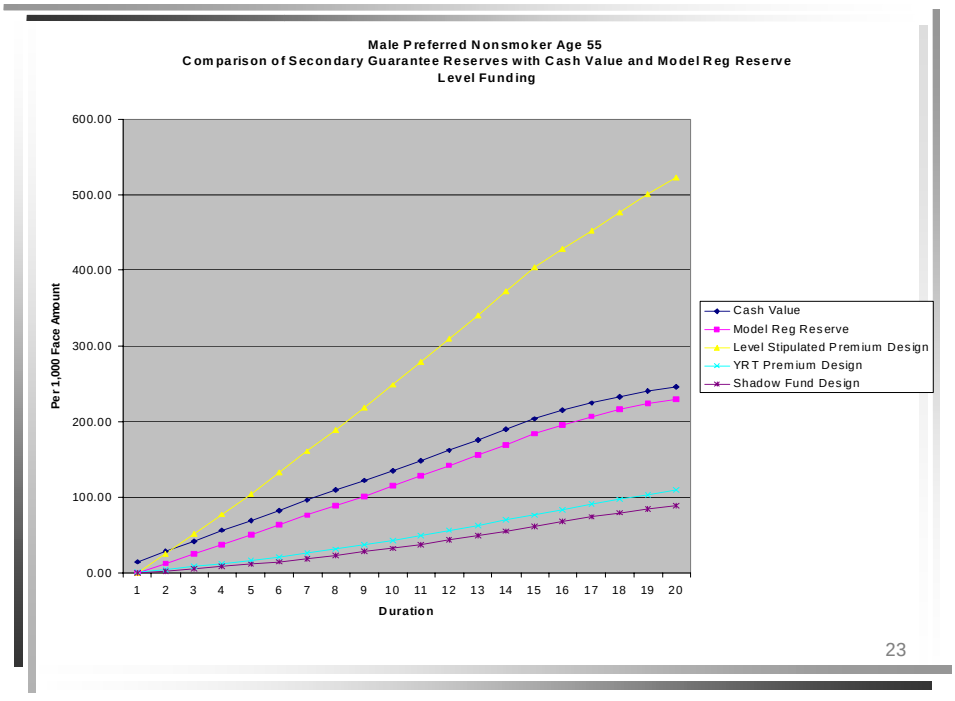

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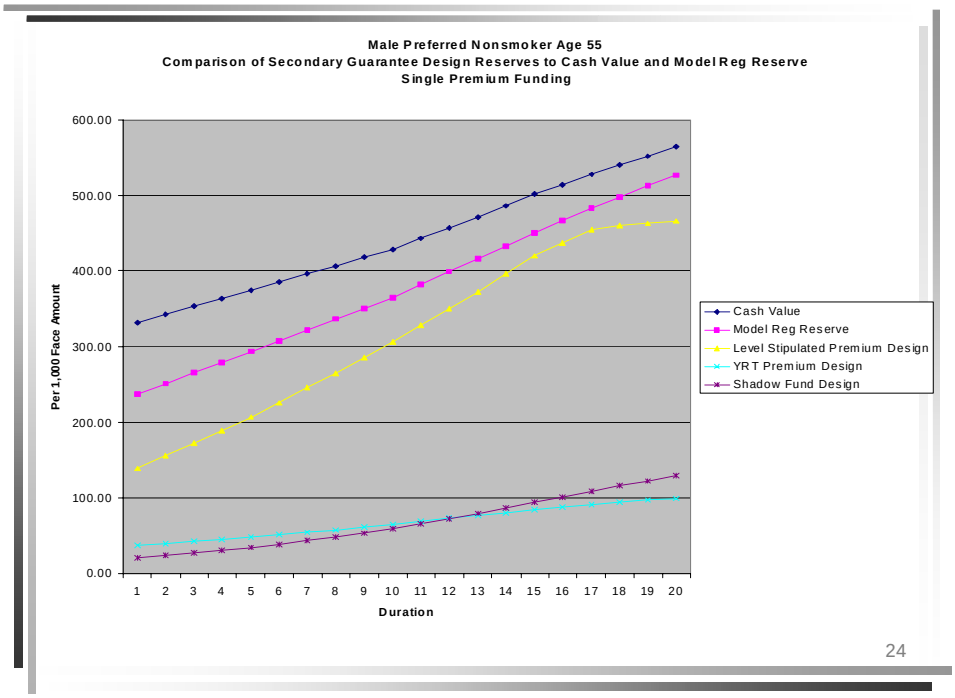
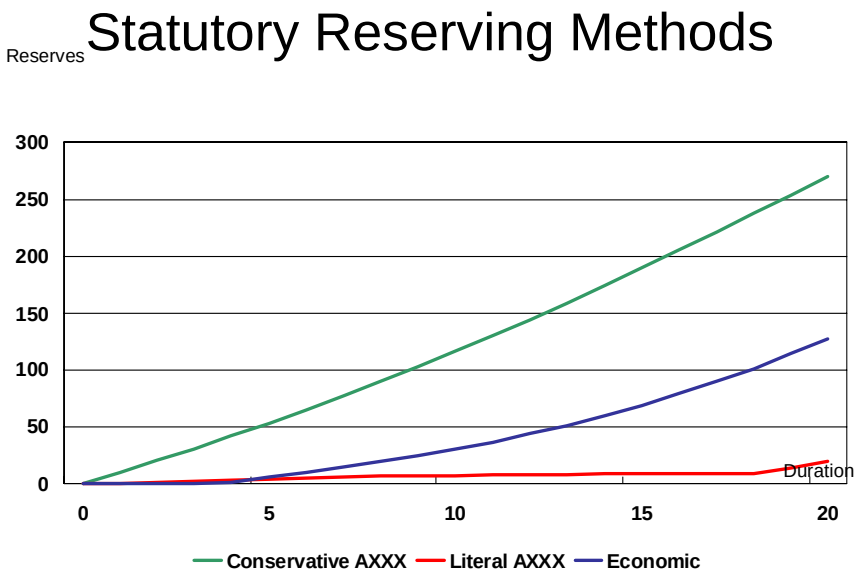
Chart 10