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## **Session 81PD**

### **2001 CSO Mortality Table—The Time is Approaching**

**Track:** Product Development

**Moderator:** ABRAHAM S. GOOTZEIT

**Panelists:** WILLIAM CARROLL  
BRIAN G. KING  
KENTON L. SCHEIWE

*Summary: The NAIC has adopted the 2001 CSO Mortality Table. States are beginning to adopt the table and the first products under the new table will likely be available in the marketplace in 2004. Conversion to the 2001 table will affect product structure, competitiveness and profitability. The reduction in mortality under the 2001 table will be reflected in corresponding changes in premiums, reserves and nonforfeiture values. The life insurance definitional limits under sections 7702 and 7702A of the Internal Revenue Code will be affected. Conversion to the 2001 table represents a significant business problem for life insurance companies operating in the United States.*

**MR. ABRAHAM S. GOOTZEIT:** We have terrific panelists today. First we have Bill Carroll, who is the actuary with the American Council of Life Insurers (ACLI), and Bill has been instrumental in the development of the 2001 CSO Table. He served on both the SOA and the Academy task forces responsible for the table and was also the ACLI spokesperson liaising with the NAIC on the 2001 CSO model reg. Bill has been a long-standing and loyal volunteer for the Society in a broad number of roles. He will speak first.

Then we'll have Kent Scheiwe. Kent manages the Milliman life practice in Indianapolis, where he has been for 14 years. Prior to that, he worked for seven years at Lafayette Life.

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Brian King is a consulting actuary with the Insurance Consulting Service Practice of Aon. He worked for five years at Travelers and the last nine years he has been with Aon Consulting in Avon, Connecticut. He primarily works on federal tax compliance issues and has authored several papers.

Bill is going to begin, and he'll talk about the development of the table, lingering issues and the state approval process. Kent is then going to talk about the impact of the table on term and traditional products. Brian will talk about the impact of the table on universal life and federal tax issues. Bill will then return to say some final words. Then we'll have a question-and-answer session at the end.

**MR. WILLIAM CARROLL:** Good afternoon, folks. I've divided an overview of the development of the 2001 CSO Mortality Table into chunks, which you can see in Chart 1. It begins with the NAIC asking the Society of Actuaries to create a table. The Society, before getting around to doing a table, first has to catch up on its basic tables. They did the 1990-1995 Basic Tables. Then they created the Valuation Basic Table (VBT). VBT is a full-blown experience table that looks just like the 1980 CSO, but it has not been loaded. This is the first time in our regulatory history where the profession has divided this job into two parts, with the Society doing the basic table, that which is part of their charge in the world, and the Academy doing the job of interacting with the NAIC to discuss how much loading it wants. Do you care about whether the reserves are loaded? Is that your concern, or do you care more about loading the Qs, or both? This is a good pilot example of how the Academy and the Society can work together to get a job done, each doing its own thing with a great deal of liasoning between them. Finally, it takes a couple of years for the NAIC to talk about the regulations that set forth the rules for using these tables.

Part of my introductory chore is to tell you about the table. It's the same shape as the 1980 CSO Table. It's got all of its parts. Some of the parts are a little different, but there aren't any new parts and they didn't throw away any parts, except for one that I will mention. There's an ultimate and a select/ultimate table. The select period is 25 years. There are smoker, non-smoker and composite tables. Again we have male and female tables, and we have gender-blended tables. This time they made it perfectly clear that these are for nonforfeiture purposes, not for valuation. The part that's missing is the CET table. There isn't one.

I single out these two features because I'm more interested in rules, taxes, transition and timing. I am not that interested in how big the table is. Two very important issues are in Chart 2 and the Academy report asserts these two facts, namely that the ultimate table generally produces lower reserves than reserves for a block of business on the select/ultimate basis, and similarly, the non-smoker reserves come out about the same—whether you do smoker and nonsmoker separately or whether you do composite. This is important because when these tables are permitted under the law by 26 states, they'll prevail. Because they have

options within them, that will raise the question of which way is the way for the tax reserve. The tax reserve tie-breaking rules and statutes say generally lowest reserves, and that's been interpreted to be on an industry basis. With the 1980 CSO, this had to be discussed. With the new table, this was discussed beforehand, so the Academy did the modeling, regulators reviewed the modeling and statements are in the Academy document asserting these facts.

I single out four issues as the important items that were discussed in the making of this regulation, which are outlined in Chart 3. The first one deals with the choices that I have. When the 1980 CSO came out, it was the first time we ever had not just one table but two—with and without select factors. Soon after arose the question: when I do my basic reserves—what we often refer to as "deficiency reserves," the ultimate in reserve test—can I switch tables? Very soon in the early 1980s, the answer became "yes." There's nothing in the statutes about this. It just says "or," and that became the practice. When Regulation XXX was adopted, that practice got codified and both versions said, "These are independent choices; you may do this." The regulators questioned this and then one state regulator, who has since retired from the regulatory practice but not from actuarial practice strongly insisted on having the same form. He did not prevail, and there is in fact, a sentence in there that can be interpreted to mean that you have a free and independent choice in this regard. Very specific language in Regulation XXX was left there.

The next two bullets come about because of the same issue and that's the issue of "Gee, this is an average table for all of the companies in the business, but obviously for some companies' products or underwriting methodologies, these reserves are not enough." For others they are too high, but that's the best we can do as long as we have a law that has a standard table for everyone and for all lines of business. Some actuaries on the NAIC actuarial task force wanted to deal with that in various ways. The way they decided to deal with it was by requiring that there be full-blown asset adequacy analysis in the model, and no longer the kind of section 7 exemption that used to exist in the actuarial opinion and memorandum regulation. Why bother? Isn't this redundant? Didn't the NAIC already change its regulation so that at the national model level, the only kind of opinion is the full-blown asset adequacy analysis? The answer to that is that it has not been widely adopted by the states, and it's likely that it is not going to be, so this is a belt-and-suspenders approach to that issue. . The regulator then has the comfort that he or she doesn't need to worry about those blocks of business or those companies where this table might not be appropriate, because the actuary will take care of that when doing his or her actuarial analysis.

The other way of approaching this would be (and this was advocated by New York, which wanted companies to be required to file with the states, each and every state) data that would enable the construction of company-specific mortality tables so that the regulator would be able to second-guess the company's actuaries as to whether or not this table was appropriate. The industry strenuously and

successfully resisted this, and that requirement is not there. Finally there was some discussion of the flexibility in the gender-blended rules and I'll only say that the rules are the same as they were before. In fact, they're a bit more flexible. If you need to know about them, compare the current version with the prior version and you'll see some of the rare requirements have been removed.

This is an overview of regulation. I'm going to talk about three of these, which are the section titles of the reg. If you're involved in this business, you should read the regulations. You can get copies at the NAIC model regulation service. If you don't have access to that, there are about five states that have already published their version of the regulation on their Web sites. The section labeled "2001 CSO Table" is the section where it says you may use this and the suggested date is for policies issued January 1 of the year following the state adoption. You must use this for everything issued after January 1, 2009. The section on conditions is the site where they present three different conditions for use of the table. The same flexible rules that previously existed still do, with regard to your choices about whether to use smoker, non-smoker or composite, and if you can do some chores with one set and another task on the same policy with the opposite set. You have the same flexibility you had before. They have the rule about flexibility with regard to ultimate versus select/ultimate, and they have the rules saying that you must have an asset adequacy analysis.

Let's talk about applicability to Regulation XXX. If they had done it my way, I would have said in one sentence that you may substitute 2001 CSO Mortality Table for the 1980 CSO Table and Regulation XXX, using the full name of it. What they have in this document is very painstaking. If you need to use it, they have a very painstaking approach to the issue. They've gone through Regulation XXX and found every single reference to any kind of a mortality rate, decided what the corresponding reference is in the 2001 CSO environment and have published all these little edits. Take a copy of your current Regulation XXX and mark it up as described in that rule if you need to do that. If you don't need to do that, simply understand that it's very simple. The corresponding parts of the 2001 CSO Table are substituted for the comparable part of the 1980 CSO Table. What prevents that from being a simple, perfect mapping is the fact that they don't have exactly corresponding parts. The 1980 CSO has the basic table, the 10-year select factors, and the more lengthy 20-year select factors that were found in Regulation XXX. So it has three parts. The 2001 CSO only has two parts: the basic table and the 25-year select factors. There's a little bit of a tension in deciding how to map them. But that work is done and it's in there if it's needed. The gender-blended rules are there. The balance of it is legalese.

The last thing I wanted to talk about is to encourage you to read the complete reports. You should at least glance at them so that you know what's there. The first thing you'll see is the table of contents, and there are about 20 documents because it's in the form of a basic report with many appendices. It has every comparison you can think of in it. It compares mortality tables, smokers versus

non-smokers, males versus females and the new table versus the old table. There's a good bit of discussion about how things were put together, and all the tables themselves are there in the form of Excel spreadsheets.

**MR. KENTON SCHEIWE:** Thank you for laying the groundwork for the table. I'm here to talk about term and whole life products and how the 2001 CSO affects them. I'm going to divide the history into two sections. The first section includes how the 2001 CSO Table affects values like reserves, cash values, corridor factors and MEC premiums; possibly the more interesting part of this presentation are the last two points. We created a model office for term products and then for whole life products to see how the new table affects products.

Let's look at term reserves. Chart 4 shows a ratio of the reserves by duration of the 2001 CSO reserve to 1980 CSO reserve. For example, this is a 20-year term reserve for an age 45 male non-smoker, I believe. Looking at this chart, you can see on average that it's about 70 percent. The reserve is coming down about 30 percent from what the 1980 CSO reserve was. I should clarify that this is just the basic reserve; this does not refer to the deficiency reserve piece of Regulation XXX. We can expect tax reserves to do something similar. You can imagine that this is where the leverage comes in when you're going to be pricing 2001 CSO tables. Reserves are coming down on a statutory basis, which will hopefully allow you to have more competitive products. But then on the reverse side, taxes are also coming down, which means that we're going to have to get some of those profits back on the tax side.

Chart 5 shows commissioners reserve valuation method (CRVM) whole life reserves. I'm showing basically two sets of reserves in this chart. One is for a male non-smoker, age 35, and a male non-smoker, age 65. The top two lines represent age 65; the bottom lines represent age 35. Here you can see that if you use the ultimate table it would provide you with lower reserves than the selected ultimate. You can see the difference there. In this graph I'm comparing the 2001 CSO reserve to the 1980 CSO reserve and taking that ratio.

Chart 6 shows cash value. What you can see generally on this chart, similar to the last one, is that the bottom two lines represent a male non-smoker, issue age 35, and those reserves are roughly 85 percent to 90 percent of the 1980 CSO reserves. That's what we saw in the last chart for the reserve. It also shows that the ratios for age 65 reserves are slightly higher than what they are for age 35, but overall we can expect reserves and cash values to be coming down.

Chart 7 shows cash value accumulation test (CVAT) corridor factors. This comes into play for traditional life in net single premiums for paid-up insurance, primarily since these corridor factors are simply reciprocals of those. Right away from looking at this chart I glean the risk classifications: male non-smoker, male smoker and female non-smoker. Those ratios pretty much follow the same pattern; they're all together. Then we have the female smokers who drift off on their own down at

the bottom. So we see that we can expect a lot more lowering of the net single premium for risk classes of male non-smoker, male smoker and female non-smoker, but not as much for female smokers.

Chart 8 shows Section 7702 corridor factors. It's a similar slide, except we're showing the actual rates here. The bottom line is the guideline premium test corridor factors, which are the ones that appear in the Section 7702. Those are 250 percent until age 40, grading down. The other two lines are of more interest. These show that the corridor factors, indeed, are increasing when we go to the 2001 CSO Table. So for products that try to minimize the amount of insurance in the product, when you go to the 2001 CSO Table, you only increase that net amount of risk in the product.

Chart 9 shows a ratio of modified endowment premiums. There are some traditional products out there now that set their premiums right at the level. This chart shows that those net premiums will be coming down on a per thousand basis, and on average, they're going to be coming down somewhere in the neighborhood of 10 to 15 percent. Once again, the female smokers are just out there separately.

Now let's go to the more interesting portion. How does 2001 CSO affect term insurance? We created a model office showing three sets of term plans: 10-year, 20-year and 30-year term plans. We created this product, these term plans, so that they return a 5 percent profit margin, that being the present value of profits over the present value of premiums. We started with the 1980 CSO product and then, one step at a time, turned it into a 2001 CSO plan. In order to do this, we made the changes to (1) the statutory basis table, (2) the statutory deficiency table, (3) the cash value table and (4) the tax table.

Chart 10 shows how we changed the statutory reserves to 2001 CSO. We started with the 1980 CSO plan, and then within our profit model we substituted a 2001 CSO Table with the basic reserves. That's what I mean by "statutory basis." We then looked at how much the profit margin changed by substituting the 2001 CSO Table for the 1980 CSO Table and calculating the basic reserves. To do this, we divided the term plans into two. One is a competitive term, which had deficiency reserves, and then one is not so competitive and did not have deficiency reserves. That's why you see two numbers on each line. For example, on the bottom row, we see the 30-year term plan on statutory basis; this is the basic reserve. Now, the profit margin increased by 0.2 percent. You may recall that we priced it at 5 percent. So this profit margin went from 5 percent to 5.2 percent for the 30-year competitive term product. It went up much more for the not-so-competitive term product. This next chart, I think, will explain it.

Chart 11 illustrates the change in the statutory deficiency table. In the right column there are deficiencies. In this next set, we changed the reserve table being used to calculate deficiencies from the 1980 CSO to the 2001 CSO. Here you see some rather large changes for the competitive term product and very little or no changes

in deficiency reserves, simply because the not-so-competitive term has no deficiency reserves. You're going to have to look at these two changes together. Also recall how Regulation XXX works. You compare the basic reserves to that, what I'll call the "A reserve," as it's called in Regulation XXX. Then you have the deficiency reserve portion, and you take the greater of the two. With the competitive term product, even though we changed the basic reserve, that didn't make any difference because the A reserve was the bigger reserve. So it made little difference. When we went through the deficiency reserve portion, there was a much bigger change and these next slides will explain why that happened. When I see this, I see a 7.7 percent change in the profit margins. That is huge. Where is that coming from? These next slides will explain that.

Chart 12 illustrates the deficiency reserves per \$1,000. This is what happened. The deficiency reserves on the 1980 CSO plan were much bigger, and I picked out the male non-smoker issue age 45, to show that. They're much bigger than they were on the 2001 CSO, and that was the driving force for increasing the profit going from the 1980 CSO to 2001 CSO. Chart 13 gets more to the root of why this is happening. It's the X factor. The way we defined X factors in this term product was to equate the experience mortality to the X factors that we used—X factors being the X factor itself times the select factor, the 2001 CSO factor. The product of those things resulted in our experience mortality. It was done on a cell-by-cell basis. This is the key to a lot of what you do when you start looking at your term products. How you set your X factors is very important. If you are going to set your X factors on a cell-by-cell basis like we're doing, and if you have experience mortality rates that are about the same slope as your valuation mortality, then you're going to minimize your deficiency reserves. That is why the deficiency reserves came down. We had experience mortality on this cell in our whole pricing model that had a very similar slope to the 2001 CSO. If your experience mortality is a lot different than the 2001 CSO mortality slope, you may be setting up more deficiency reserves than you care to.

Next we changed the cash value table, as shown in Chart 14. This is a term product, so it didn't make any difference. Chart 15 illustrates the change in tax reserve table. In this we gave back some of our profit.

Finally, Chart 16 summarizes the effects of going from the 1980 CSO to the 2001 CSO Table in total. The aggregate column shows that for the 30-year term product, for our competitive product, we had a 5.5 percent increase in our profit margin. What does this mean to premium levels? Chart 17 shows that. It's for the 20-year term. How much can you increase or decrease? How much will premiums change if you want to get back to that 5 percent profit margin that we started with? This shows several things. First of all, it's mainly the older ages that are affected in our model here. Second, you could have cells where the premiums actually increase. Chart 18 is the same sort of graph except that this is for the non-competitive term products and here you see very few changes. The only thing that's affected there is the basic reserve.

Let's move on to whole life insurance. In this model office we assumed a non-par whole life plan with fairly low premium levels. We did the same sort of routine. We started with the 1980 CSO table and made changes one by one through the basic reserve, deficiency reserve, cash value table and then the tax table to see how our profits would change. On this model we started with this basic product that had a profit margin of 7.7 percent and internal rate of return (IRR) of 13.8 percent. That's our base line. When we changed the basic reserve to 2001 CSO, our profit margin went up and our internal rate of return had a sizable increase—13.8 percent up to 22.9 percent. That's a dramatic increase. This plan did not have the deficiency reserves, so we didn't have any change in the profitability. Cash values once again increased the profitability of the plan simply because the cash value levels fell.

Chart 19 shows the change in tax reserves to the 2001 CSO ultimate. This is where we gave back some of the profit. We started with a product that on an internal rate of return basis was initially at 13.8 percent and it ended at 20.8 percent. Please bear in mind this was just our model office on one product that we tested, but I consider that a sizable increase, and even the profit margin from 7.7 percent up to 10.6 percent is sizable.

Let's assume you do have some products where you can be more competitive. What are you going to do? The company will need to make a decision. If it doesn't do anything, that means it will keep the increased profits, but it would probably be tough to get away with that. Agents' commissions may increase. I know there are some people out there who have been giving presentations to marketing forces where they're saying "Hey, this is your chance to possibly increase your commissions." So as a home-office actuary you have to be aware of that. The marketing force could also have an idea that this might be an area where, once you implement a new table, you can increase commissions. Then premiums may decrease, or possibly this is a time when you can increase the benefits in some way.

**MR. BRIAN KING:** I'm going to talk about some of the tax issues that will arise as we move our portfolios over to the new table. I'm also going to talk about the effects that the table will have on a single premium product to show how the changes in our tax law limit are going to affect the highly investment-oriented contracts, and how they're going to reduce the tax effectiveness of those products.

I'm going to talk about Section 7702 and Section 7702A and how the new table is going to affect our funding limitations on life insurance contracts. I'm also going to talk about transition issues that are likely to come up as we move from the 1980 CSO to the 2001 CSO. I'll follow that up with a discussion on the accumulation products.

I thought I'd start off talking about how the new table is going to play into the calculation of our tax reserves under Section 807, since that's going to lead into the



discussion on Section 7702. Section 807 sets our requirements for tax reserves. It essentially obliges us to hold reserves at a level that's the greater of our cash surrender value of the contract or what's defined in Section 807 to be the federally prescribed reserves. Now, in computing federally prescribed reserves, Section 807 goes through the methodology and the assumptions that we need to make in order to do that calculation. With respect to mortality, it requires that we use what's called the "prevailing commissioners' standard table." The concept of the prevailing table will carry over into Section 7702 as well, as that forms the basis for what is referred to as our reasonable mortality requirement.

Now, the prevailing commissioners' standard table defined in Section 807 is based on the most recent commissioners' standard table prescribed by the NAIC. With the adoption of the 2001 CSO in December of 2002, the 2001 CSO is now the most recent commissioners' standard table. It needs to be permitted for use in valuing reserves for that contract. As Bill mentioned, we have a model reg that has both a permitted and a required date for use in both nonforfeiture and valuation. What must happen here is that the state needs to approve the model reg in order for it to be viewed as permitted, and we need to have the majority of states approve the table. We need 26 states to go through the adoption process before the 2001 CSO becomes prevailing.

This is the first time we've needed to deal with a transition to a new prevailing table. When Section 807 was introduced back in 1984, the 1980 CSO was already the prevailing table. We're going to need to track the adoption process on a state-by-state basis. We're already starting to see states that go through the approval basis for forms based on the 2001 CSO without actually going through the formal adoption process. I think Bill may touch a little bit on how that's going to play out. I know the Treasury and the IRS are going to be tracking the adoption process. It's certainly in their interest to know when the 2001 CSO becomes prevailing, and the ACLI is also going to keep tabs on that. You'll probably start to see a real push in the industry to get the remaining states on board to approve the new table once we have 26 states go through the adoption process.

One thing that group writers may also need to keep in mind is that for purposes of Section 807 reserves, it's going to be the certificate issue date and not the group or master contract issue dates that will drive our reserve calculations. We may end up in situations where under a group contract we have certificate value for tax purposes on one basis for those issued prior to the date at which this becomes prevailing and those issued on 2001 for the recent issues.

When Section 807 was introduced, there was enough forethought to create transition rules that would guide us with a new prevailing table. Essentially, we have a three-year transition period. Once we get through the adoption process and have 26 state approvals, then starting January 1 of the following year we're going to have a three-year period when companies will have a choice between using the old prevailing table, the 1980 CSO, or the new prevailing table. Once that three-

year period expires, then all contracts will be required to use the new 2001 CSO Table.

Section 807 has the lowest reserve rule. It tells us where we have a choice of tables, and the 2001 CSO consists of approximately 84 different tables. We chose the one that resulted in the lowest reserve. It was a conscious effort on the part of those who developed the table to make sure that the ultimate table generally produced reserves lower than the select and ultimate, and similarly, you have a choice between smoker-distinct or composite tables.

Section 7702 defines the funding limitations for life insurance contracts. These are tests that all contracts need to satisfy, and they need to satisfy one of the two tests. The first is called a guideline premium test, which places a limitation on the amount of premium that can be paid into a life insurance contract. It has a minimum death benefit requirement that goes along with that. The second test is called the cash value accumulation test, which Kent mentioned when he was talking about the net single premium factors. That test is designed to maintain a maximum amount of cash value that can accrue inside a life insurance contract. We also have Section 7702A, which defines our modified endowment contracts. That test is the basis for determining the taxation on pre-debt distribution and whether we apply the life insurance rules or the annuity rules. All these limitations that are defined in Section 7702 are calculated on the basis of what's called "reasonable" mortality. Section 7702, although it tells us we need to use "reasonable" mortality, doesn't define exactly what "reasonable" is, but it does place an upper bound on what's going to be permitted to be reasonable, and that upper bound will be the prevailing table. So we have a link back to Section 807, where the prevailing table is defined. Once we get to a point where 26 states adopt the 2001 CSO, it would appear that the 2001 CSO sets an upper bound on the mortality we can use for our Section 7702 and Section 7702A calculations.

I put a chart together to give you an idea of what's going to happen to our funding limitation on life insurance contracts. Chart 20 illustrates the change in tax limitations. All of this is going to move to reducing the tax effectiveness of life insurance contracts, limit the amount of money we can put into them and certainly limit the cash value growth of life insurance. We're going to find that there's a larger reduction on the funding on contracts issued to males, to contracts issued on non-smokers relative to females, and smokers. Generally we'll find that we can put about 15 percent to 25 percent less in our male-issued contracts and 10 percent to 20 percent for females. The items that jump out from this table are the last two lines, which are guideline level premium calculations for an option two contract with a death benefit that's based on the face value plus the cash value. If we change our endowment age in the calculation from 95 to age 120, you see there's a huge jump in the guideline level premium. Now, that's dependent on our ability to actually extend their calculations out to age 120, which I'll get into in a little while, because it seems to be in conflict with the calculation rules of Section 7702. It's also one area that the IRS and the Treasury are aware of, so we may see some guidance

that would limit our ability to take advantage of this situation.

Next I want to get into several of the issues that are going to come up as we move forward to the 2001 CSO. I'm going to touch on when we should view the 2001 CSO as being reasonable and which table we should view (similar to Section 807, we'd have a choice of tables). I'll talk about which one seemed appropriate to use for our Section 7702 calculations, and how the characteristics of the new table—I'm predominantly talking about the fact that the table extends beyond age 100—work in our Section 7702 calculations.

When is the 2001 CSO reasonable? It certainly brings up the question of whether or not (because of the reference to Section 807 as the ceiling on a reasonable mortality rate) we can bring into play the three-year transition rule that's part of Section 807. This is an area where I think we're going to see some guidance from the IRS. The ACLI has been active in terms of suggesting guidance to the IRS. I'm not exactly sure what the timing is regarding issuing guidance, but we may find that it does follow the Section 807 rules and they follow the state adoption process. In this case it would become reasonable in states when they do adopt a new table. They follow the model reg, which has a permitted date and a require date of 2009. Although it's unlikely that we'll be allowed to use the 1980 CSO out that far. Or, we may come up with some other type of transition rule. Stay tuned.

One of the reasons transition becomes important, particularly in states that will be slow to adopt the 2001 CSO, is that if states are still on the 1980 CSO version of the standard nonforfeiture law, there will be a situation in which, if you're issuing contracts in those states, particularly contracts that are intended to comply with the cash value accumulation tests, you're going to have a nonforfeiture law that would set minimum cash values based upon the 1980 CSO. If we're at a point where the 2001 CSO constitutes reasonable mortality, Section 7702 will define maximum cash values based on the 2001 CSO. So we'll end up in a situation where minimums on the 1980 CSO are higher than our maximums on the 2001 CSO. It's going to make it difficult to sell those products in those states, so I think you're going to start to see a real push from the ACLI and other industry groups to get the table adopted once we have 26 states go through the approval process.

As I mentioned, ACLI has put forth recommendations for transition rules. They are recommending that we continue to retain the ability to use the 1980 CSO as a safe harbor as long as we're still issuing products on that basis. Once we start to issue products based on the 2001 CSO, the new table would be the safe harbor for using our Section 7702 calculations. Finally, once we get to January 1, 2009, we'd lose the 1980 CSO altogether. They also made a point of recognizing that today's life insurance contracts are flexible. They do anticipate that changes are going to be made to the contracts and that these types of changes shouldn't affect the mortality basis underlying our calculations. If we materially change a 1980 CSO contract, we don't lose the right to use the 1980 CSO in our funding limitations.

We have the same issue in Section 807. We need to figure out which version of the table is appropriate for use in our calculations. Again, this is an area we would expect to see guidance on. We did have guidance issued back in 1988 where the reasonable mortality requirements were introduced in Section 7702 and this was in the form of a notice that created safe harbor treatment to the 1980 CSO, and then in 1991 we had some proposed regs issued, which were more encompassing. Notice 88-128 only incorporated certain versions of the 1980 CSO for safe harbor treatment and the proposed regs were much broader in scope since we swept in all versions into the safe harbor.

Why do we need a safe harbor if we have a statute that says the prevailing table has a cap on reasonable mortality? Why can't we just rely on using the prevailing table and not worry about the need for a safe harbor? You need to look back to the statute, and the statute is what I'm going to refer to as the "permanent" rule. It tells us that we need to use mortality that's reasonable and sets a ceiling on it. Now, the Tammer legislation also has what I'll call an "interim" rule. It says that up until the point when regs are issued on reasonable mortality, which we have not received, mortality is reasonable if it doesn't differ materially from the rates we actually expect to impose. That would appear to be the operative rule that would govern reasonable mortality. Now, when that rule was issued, the industry was concerned that that may restrict our ability to use our current charges in our Section 7702 calculations, since those are the rates that don't differ materially from what we actually expect to impose. So the industry said that we need some assurance, some safe harbors, and we need to be allowed to use the 1980 CSO. I think it would be a good idea for the industry to seek similar safe harbors for the 2001 CSO as well.

There is the age 121 problem. We have a table now that's very different from prior ones, and we have calculation rules in Section 7702 that restrict the benefits we can assume in our calculation of guideline premiums, net single premiums and seven-pay premiums. It essentially forces us to deem a maturity date on our contract to be no greater than age 100. This raises the question of what do we do if we're selling products that run out beyond age 100 for a maturity date. Do we continue to apply the premium test beyond that point? What do we do for our corridor factors? The guideline premium test corridor factors stop at age 100. How do we calculate net single premiums if we can't deem benefits out beyond age 100? This is an area that hopefully we'll get some guidance on. I would caution that if you're going to develop products that extend the maturity out beyond age 100, limit your calculations for Section 7702 and cap A to age 100 and wait and see what happens. It's certainly safer to be there than to start your calculations out to 120. Chart 21 illustrates that there really isn't a difference in most of our funding limitations going from age 100 to age 120, with that one exception being the option-two premium.

I'd like to talk about single-premium products and how those are going to be impacted by the new mortality table. I followed a similar theme to Kent in that I

developed a model office for a block of single-premium contracts that were designed to comply with the cash value accumulation test. The product structure was relatively simple; there were no surrender charges, premium loads or per 1,000 loads. The product was based on an aggregate mortality table and was designed to achieve standard profit measures. Then we took that existing product shell, dropped it into the 2001 CSO Table and took a look at results. Based on the discussion of Section 7702 issues, it's no surprise that their funding limits went down. For the same amount of death benefit or allowable premium, it is now about 25 percent less than it was. It will require more death benefit for a given amount of cash value in the contract. What does this mean for consumers? It means that their return on premium is going to go down. Certainly the product itself will not have the tax effectiveness that it had, and it won't generate the returns that the policyholder was realizing under a 1980 CSO product. From the company's perspective, lower premiums translate to lower profits. Here our primary source of profit was interest rate spread and as premiums and cash values for a given amount of insurance decrease, profits will decrease as well.

A lot of single-premium products today are based on the 1980 CSO aggregate table, a table that doesn't distinguish between smokers and non-smokers. The intention was to maximize how much money can be put in for the smoker class, which is our predominant risk classification. Using the 1980 CSO aggregate table gave us an adequate margin between our current cost of insurance (COI) rates for smokers and the guaranteed rates based on the 1980 CSO aggregate table. When we dropped in the 2001 CSO, we found that it was below our expected mortality for smokers. It caused our profit margins on smokers to drop substantially because our cap on mortality limited what we could charge for our smoker risk classification. We tried taking another look at things by dropping in the smoker-distinct label. We found that results were much more consistent in terms of profitability across all risk classifications, and it generally allowed us to achieve the profitability we were looking for. We found that the face amount per dollar of premium increased about 25 percent. This may have some effect on your underwriting requirements; these contracts were issued on the simplified issue or guaranteed-issue basis. You may start to bump into those limitations. From a policyholder's prospective, we found that the long-term cost to the policyholder was about 20 to 30 basis points. That money will now primarily fund the additional risk that the contract needs to maintain because of Section 7702 limitations.

Males are impacted more than females, not surprisingly. We saw a greater reduction in the net single premiums for males than females. You will probably find that's going to carry over to just about all the different products that you will convert. You're not going to get uniform effects on all different risk classifications. Certainly female smokers are the ones where there's the least amount of mortality improvement and male non-smokers are probably the greatest. We looked at guideline premium test products versus cash value accumulation test products and found that the guideline-tested products had poor results from the policyholder prospective. They tended to realize a 30 to 40 basis point hit to their return on

premium over the long term relative to the CVAT test.

What can we do to offset some of these effects? The only thing we can do is to add some loads in the early years to help offset some of our inability to collect mortality on our risk classifications that bump into the guarantees, maybe by playing around with things in the later years to restore the cash value performance to the contract. Keep in mind that the reinsurance may be impacted by the fact that now we're requiring more insurance for a given amount of premium, and that may affect our reinsurance arrangement. Also consider using a smoker-distinct table as opposed to an aggregate table. You'll need to go through and look at your existing products, where your current mortality rates fall relative to the guarantees and see what type of manipulation you can do to maintain the profit that you're looking for while still putting a competitive product in front of the consumer. You may want to consider eliminating any guideline-tested products that are sold on a single-premium basis. Keep in mind that on a per dollar of premium, your claim costs are going to go up.

Another thing to keep in mind is that as you talk to producers and consumers, they may not understand why this is all happening. A person may sit back and say, "I'm the same person I was yesterday, so why do I need 20 percent more insurance on my contract? Why is this not performing the way it was if I bought the contract yesterday?" You might want to think about how you're going to respond to those situations. A rule of thumb that I'll close with is that these are the types of products that we're going to want to defer as long as possible with regard to converting them over to the new table. Clearly as the investment orientation of the product goes up, the Section 7702 effects really hurt the product from both a profitability perspective and a consumer perspective. I think you will begin to see your term products move over earlier because there's a benefit to the consumer. You're going to have lower prices, possibly higher compensation for your agents and also increased profitability. But as the investment orientation goes up, things start to sway the other way. So this is probably the book of business we're going to want to push off as long as possible and when we get to the point where we can stop doing this, we'll start to see some fire sales and aggressive marketing to push as many of these sales out the door until we're forced to move over to the new table. I'm going to turn it back over to Bill now.

**MR. CARROLL:** I've got a couple of issues to talk about and then I want to make some comments about Brian's discussion of the Section 7702 transition. I'm going to talk about unresolved issues. It seems that not everything was resolved. By unresolved, I mean that there are still lingering issues in the minds of the regulators and some parts of the industry. My theme for the unresolved issue is "one size fits all" when we have this average mortality table. At the high end we have regulatory concern. There are some folks who have blocks of business for which this mortality table doesn't produce adequate reserves. New York state was very strong in wanting the NAIC to require that companies submit data that would enable two things: (1) New York must have a mortality study of your company and make its own mind up about whether or not it would be appropriate for you to use

2001 CSO; and (2) it would provide a bank of data that would enable the Society of Actuaries or someone else to create a new mortality table when the time comes. New York is still persistent over that issue and as we speak here today, finishing touches are being put on a letter in New York. That letter will include a suggestion that industry had better cooperate and participate in the upcoming study of the Society of Actuaries or else New York will include in its version of the regulation a requirement that companies doing business in New York—not just domiciled in New York—submit annual data to enable New York to conduct a mortality study of their companies.

**FROM THE FLOOR:** Through whom is this letter coming?

**MR. CARROLL:** It's coming through the Superintendent of the State of New York. In fact, the most recent comment made has been that the letter is too actuarial, and it needs to be written in plain English so the superintendent might sign it. It's going to be sent to all companies doing business in New York. Things to look for are, for example, what they say they will do if the industry doesn't participate. Are they going to say that they absolutely will or are they going to suggest that they might? Another thing to look for is how they will measure successful participation. Are they going to stick their necks out and say how many companies have to participate or what percentage of the business? Or are they just going to use a fuzzy word that could be interpreted one way or the other? I don't know.

At the same time, the Society of Actuaries and the Life Insurance Marketing and Research Association (LIMRA) have gotten their act together with a letter that will be sent to all companies on their mailing list, which will probably include every company with an actuary. I'm not sure how they make sure that they send it to all companies. Those companies that have previously participated in the Society's study will get a phone call. Those companies that haven't participated will just get this letter. The ACLI plans to follow up with a letter to its members urging them to participate on a voluntary basis in order to avoid the heavy hand of the law and that covers that issue.

The other side of the one-size-fits-all issue is that of some term writers who believe that these tables do not lower the reserves to where they should be. They need to be lower and for a preferred risk in the high end of the market place, they still need relief. At the ACLI there was a general agreement that the term writers will stop agitating for lower reserves in the 2001 CSO table and the ACLI will try to facilitate some relief for them after the 2001 CSO table is done and finished. Working groups have tried to come up with a solution that meets all of the constraints of the current system. That is to say it doesn't upset anybody's favorite tax advantages and it works within the nonforfeiture law and the standard valuation law. My opinion is that it is virtually impossible to find a solution, but that remains to be seen. Term writers have been to the actuarial committee and there's going to be a survey. Perhaps it's gone out already and is asking companies questions about this issue. There will be a spirited discussion. There will be a look at potential

solutions, which may or may not lead to the ACLI asking the NAIC to consider a change. My view is that the problem is too difficult to be resolved; it would need some kind of a major crisis in order to force a solution.

As of April 15, one state, Texas, had adopted the rule. Not only was it published for commentary or hearing, but it was effective and in place. Two states, Oklahoma and Utah, put out formal proposals. Hearings were scheduled, or at least an opportunity for a hearing existed, and those have not yet run their course. Since April 15, two more states, Pennsylvania and New Mexico, have put out paper. This is slow, but I don't think it's an indication yet. This was only adopted in December. It takes time to run these kinds of documents through the legal ringer and get them published. Early in the year, states focus on legislative activities, so I don't think we've had enough time to get a good measure of how fast the process is going to be. ACLI policy at this time is not going to aggressively seek adoption. We have no problem with the rules as they exist. Our position is that if commissioners seek our help, we would be very happy to help. We would testify and say we think the table ought to be adopted. We'd help with drafting. We'd help them in any way we can, but we're not going to aggressively seek anything. When it happens that we get close to 26 states, it's very highly likely that the policy will change. As Brian indicated, there will be a compelling interest to get from 26 to 52 as fast as possible. This gives me an introduction to talking about the Section 7702 transition.

Brian did a good job of telling you that there's not a problem with tax reserve transition. The statute is perfectly clear in my opinion, and it gives you a transition period. For example, if the table became prevailing on January 1, 2006—it could be 2005, not likely to be 2004—then you have three full calendar years, which would be 2006, 2007 and 2008. All business issued after January 1, 2009, would, for tax reserve purposes, be required to be on the 2001 CSO. Coincidentally, that's what the model says; that's not without thought. It was built to give leeway. If the whole thing gets to 26 in two years, then the following January 1, there will be a year's grace at the end of the road. But that's how the dates were chosen, and the transition was clear. For Section 7702, we have the 1980 CSO safe harbor and a drop-dead rule in the statute. You can interpret the statute in two ways; there are tax authorities that have spoken for each of these ways. One perspective on says that as of January 1, 2006, the new ceiling is 2001 CSO. That's the prevailing date. I believe it's virtually impossible for companies to live with a sudden single change date where everything we sold last month was one way, and everything we sell next month is the other way.

The more liberal reading says "Don't worry about that. When they said 'prevailing table,' they meant to bring in all the baggage that's associated with Section 807, which has a three-year grace period." People have published that opinion not as a legal opinion, just as an off-hand comment—maybe in one of the section newsletters. There's still a problem though because that would happen when things became prevailing, and when we hit 26 and things become prevailing, there are still



another 26 or 20 that aren't prevailing, and I don't want to suddenly have to use the 2001 CSO as the reasonable mortality standard in a state where the 1980 CSO is my nonforfeiture standard. So I could use the best of both worlds, and that's what the ACLI asked for if you listened carefully. Brian described it very accurately. Our letter asked that the 1980 CSO safe harbor continue all the way up to January 1, 2009, with regard to policies that are on that basis and as companies come out with policies on the new basis, then let that be the safe harbor.

That leaves us only with the problem of the straggler state that doesn't get this done by 2009. I'd go on record that that will not happen, that the industry will have such force and come down on that state, that it will not be a state that puts us in a situation that not satisfied their nonforfeiture laws, it won't meet the definition of life insurance.

**MR. GOOTZEIT:** When you first hear about mortality tables, you think you just drop the numbers into the spreadsheets, do your pricing and you're done. Of course, that's not the situation at all. I'm inviting people to ask questions or provide comments right now.

**MR. MARK BUEHRER:** (RGA Insurance) When does this table become effective for codification purposes, and how is that process determined?

**PANELIST:** The question is, when does this table become the NAIC accounting standard? A couple things have to happen. The NAIC has to produce the nonforfeiture language and create a valuation rule. We'll suppose that's trivial; they can do that. Then they have to put it into the appendix of the codification book, which is the accounting practices manual. They adopt it. Next we read what they put in there and the ACLI will look at them as they're doing this. I believe it's our intent to strongly recommend that they leave the dating just the way it is, which will say you may use it at this time and you must use it at that time. We will argue for flexibility during that transition period as long as you're satisfying state laws. Then you're doing your reserves. That way, you don't have a problem in having to disclose any differential between what you've done and what the NAIC accounting prescribes. This is not the most perfect solution to an awkward problem, and I am not 100 percent clear.

**PANELIST:** It seems like it would be in the table very soon if you chose to do that, and definitely if your state adopted it—that would in effect be the basis.

**PANELIST:** Yes. I think that what I said will fall in place.

**FROM THE FLOOR:** So possibly as soon as January 1, 2004 ?

**PANELIST:** I have to apologize for not knowing the current status at the NAIC, and I also mix up accreditation with codification, but I believe the first step has already happened. Step one is for the Life and Health Actuarial Task Force to inform the

Accounting Practices Committee that they indeed have adopted a model. I'm guessing that has already happened, and it is possible that during this calendar year they will get to it and the document will be adopted by December, but I don't know for sure. That's something that we should know and we watch out for.

**MR. MARK GULAS:** (National Western Life) Wouldn't companies have an argument that in order to comply to their Section 7702, you have to be approved in the state of that particular product? Therefore, as soon as the 26 states adopt the 2001 table, your approved products that are still in the state are still a product of the 1980 CSO basis. Aren't there two qualifications under Section 7702? First, that it has to be a product that's approved by the state and second, that you meet the limits. The product that has been approved by the state is a 1980 CSO product.

**PANELIST:** I'm not sure that you're talking about the applicable law requirement in Section 7702.

**FROM THE FLOOR:** Right. How could you immediately move to 2001 CSO when the product that you're applying it to is only approved on a 1980 CSO table?

**PANELIST:** The point you're making is that Section 7702 says two things. It has to be insurance under state law, and it's got to meet this test. If it does, it's life insurance, and if it doesn't, it's not. Therefore, I would conclude it's not. Let's say I'm in the state that requires 1980 CSO and they never change. the commissioner says the 1980 CSO is good enough. That state does not change, time passes, it's the year 2010, then 2011, then 2012, and the state is still doing 1980 CSO business, and in order to create a whole life policy that meets the nonforfeiture law, I end up having to create a policy that does not pass Section 7702. It's not life insurance. If part of your argument is that having to satisfy state law is going to force them to accept 1980 CSO forever in a state that won't go there, they wouldn't do that. That would be bad IRS policy because we'd pick a state and make that the 1980 CSO state.

**PANELIST:** Remember that Bill went on record today stating that once 26 states adopt an act, that it will happen in the next 25 in three years or less.

**MR. CARROLL:** I am on record that it won't happen. If indeed we have 26 states, then it will be a landslide after that and there won't be a straggler state. There will be enormous industry pressure. If the commissioner won't make a rule, then you forget the commissioner, go to the legislature and pass a law.

**FROM THE FLOOR:** I like that. Is there any discussion as far as having the Section 7702 changed to something other than 4 percent and 6 percent discount rates, given the current interest environment?

**PANELIST:** There have been segments of the industry that would like to see the interest rate index at least move up and down like they have in the nonforfeiture

law. I would strongly caution against that. I think that there's enough trouble administering the laws as they exist today to try to deal with now a floating interest rate environment. I think it's a dangerous proposition to get into, but there are those who would like to see that. When I was talking about the age 120 problem in the new mortality table, one of the ways that that can get dealt with is through legislation. The danger of opening up Section 7702 for legislation is that there's no guarantee that they're going to focus on the issue that we want them to focus on. If you go back to 1982 or 1983 when 101F came out and then look forward to today, there has been nothing that has expanded the investment orientation of life insurance along the way. Each move has been to whack it back a little further. Once this administrative change to deal with the age 120 problem is opened, Congress can see that it's open and maybe view it as a source of revenue. Who knows what could happen?

**FROM THE FLOOR:** Does it require legislation by regulation?

**PANELIST:** It's part of the statute, and the only way you can change a statute is through legislation.

**PANELIST:** Both industry and government are very anxious when anyone speaks about opening the statute. Each side is afraid that the other side will cause harm. I need to amend one of the answers. The question about codification—it's important. The state accounting does not trump state law. The NAIC accounting doesn't trump state law. The state regs that tell you to complete your financial statement in this manner tell you that you should follow the NAIC manuals except where states have something specific to the contrary. We're sitting in an environment where states have something specific to the contrary; they have the 1980 CSO as the standard. I'm going to change my answer and say that yes, it will become the NAIC standard when the NAIC puts it in place, and it will follow the dates and the document. But it won't become the rule that you have to follow and disclose something different because the state has something to the contrary.

**MR. CHRISTOPHER HAUSE:** (Hause Actuarial Solutions) We are attempting to put through a bottled regulation also adopted in the 2001 male composite ultimate and dynamic valuation interest rates for purposes of valuing credit life liabilities. We hope to make that coincide with the effective date of adoption of the 2001 CSO Table for ordinary issues as well. Unfortunately, we're getting stuck on the monthly payment types of credit life insurance, which is not the original target, and the regulator's desire to apply Regulation XXX to monthly premium credit life insurance, which has lots of pitfalls to it. So just be aware that there are other versions of the table that we want to adopt for credit life mortality standards, and presumably that will become the tax table as well when that happens. I do have a question with regard to the margins under 1980 CSO. Everyone used 1980 CSO as the guaranteed mortality in universal life. With the advent of the 2001 CSO, it concerns me that the difference between the expected mortality and the guaranteed mortality is going to shrink. I wonder if anybody on the panel shares

my concern in that regard.

**MR. CARROLL:** The Academy of Actuaries had two committees. One committee was to work on the construction of the 2001 CSO Table, and the other committee was to look at other issues. One of their other issues was the issue that you raise. There are some states that put ceilings on mortality charges and they use the 1980 CSO. This committee took the position that that's not a good idea. The committee told the NAIC actuarial task force that that's not a suitable standard because of your point about the margins being too slight. The NAIC replied, and we agreed, that that's all well and good, but that's not its issue. The NAIC has no such ceilings. If those exist in the states, they're state matters and they should be dealt with at the state level I'm distinguishing between passing a rule where it's appropriate for the industry to get together and say that it's not a good rule, as opposed to my own company deciding what I will use as my ceiling. That's a competitive issue. We have anti-trust laws. Each company has to decide for itself what it should do.

**MR. GOOTZEIT:** Bill, I think we're going to have to cut off here. This discussion on 2001 CSO is fraught with issues on margins and regulation and tax.

Chart 1

## Development of Table

- NAIC LHATF Request New Valuation Table
- SOA 90-95 Basic Tables
- SOA Valuation Basic Table (VBT)
- AAA Develops Proposed 2001 CSO
- AAA Final Report (June 2002)
- NAIC Adopts Model Reg. (Dec. 2002)

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Chart 2

## Key Design Features

- Reserves on Ultimate Table Generally less than Reserves on Select/Ultimate Basis
- Reserves on Smoker/Nonsmoker Basis Generally same as Reserves on Composite Basis

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Chart 3



## Key Issues Addressed by NAIC

- Same Form of Table for Basic Reserves and “Deficiency Reserves” Not Required
- Requirement for Actuarial Opinion Based on Asset Adequacy Analysis Included
- No Requirement to File for Data to Enable Mortality Studies
- Gender-Blended Flexibility Continued

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Chart 4

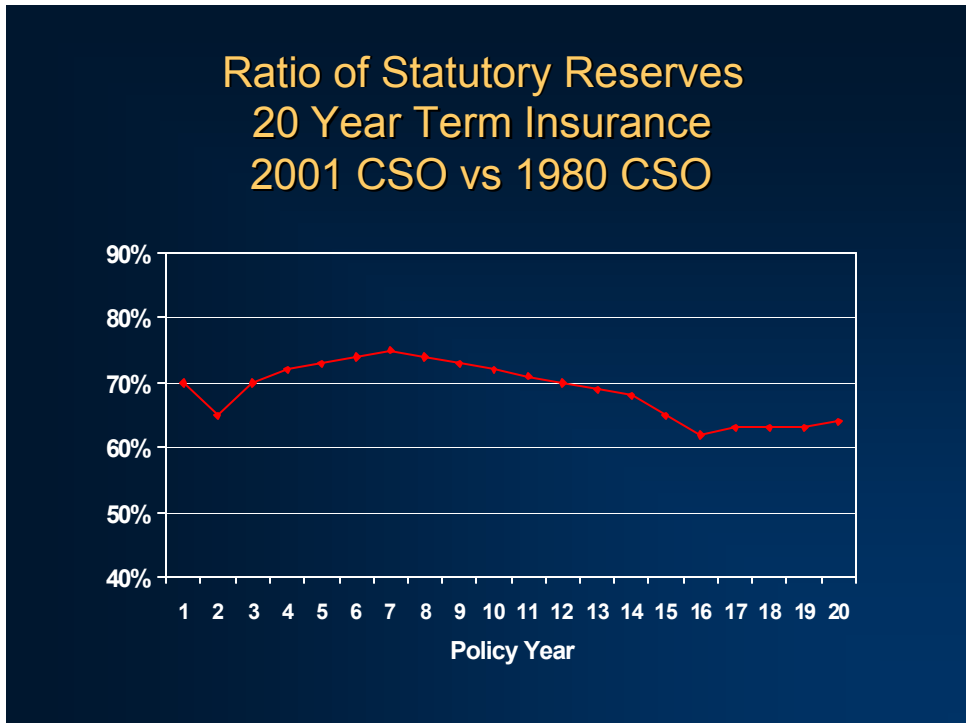


Chart 5

## CRVM Reserve Comparison

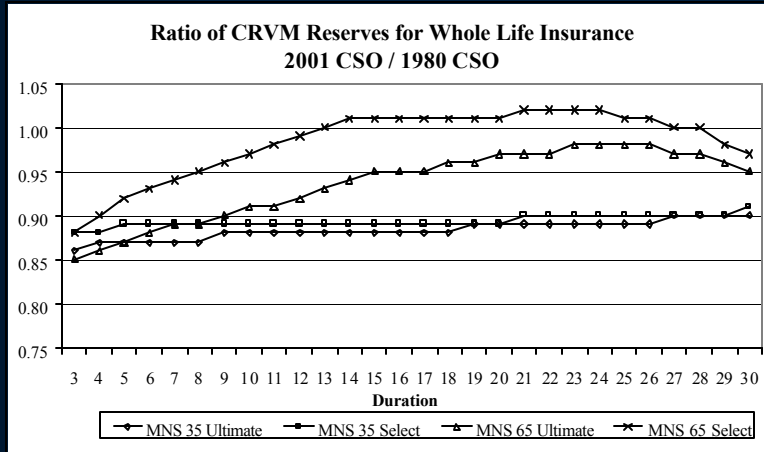


Chart 6

## Minimum Cash Value Comparison

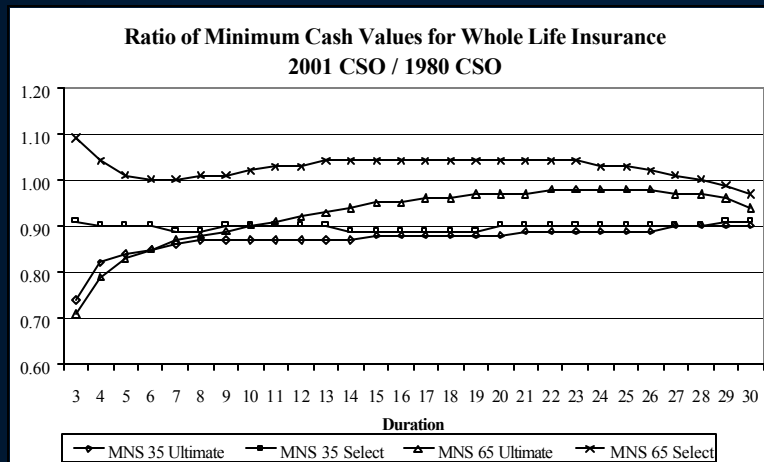


Chart 7

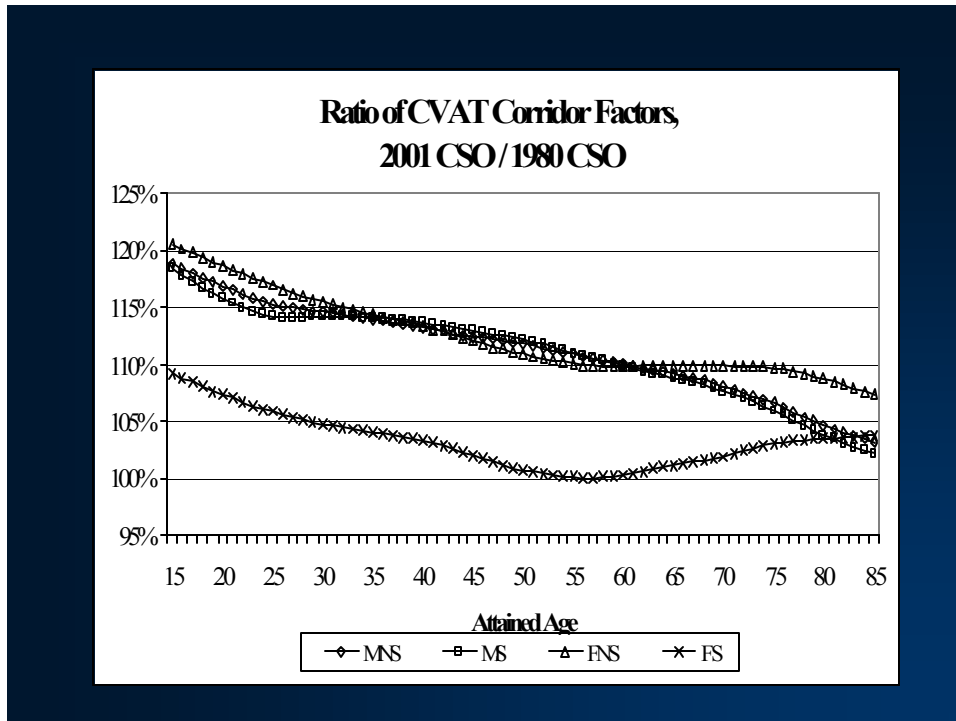


Chart 8

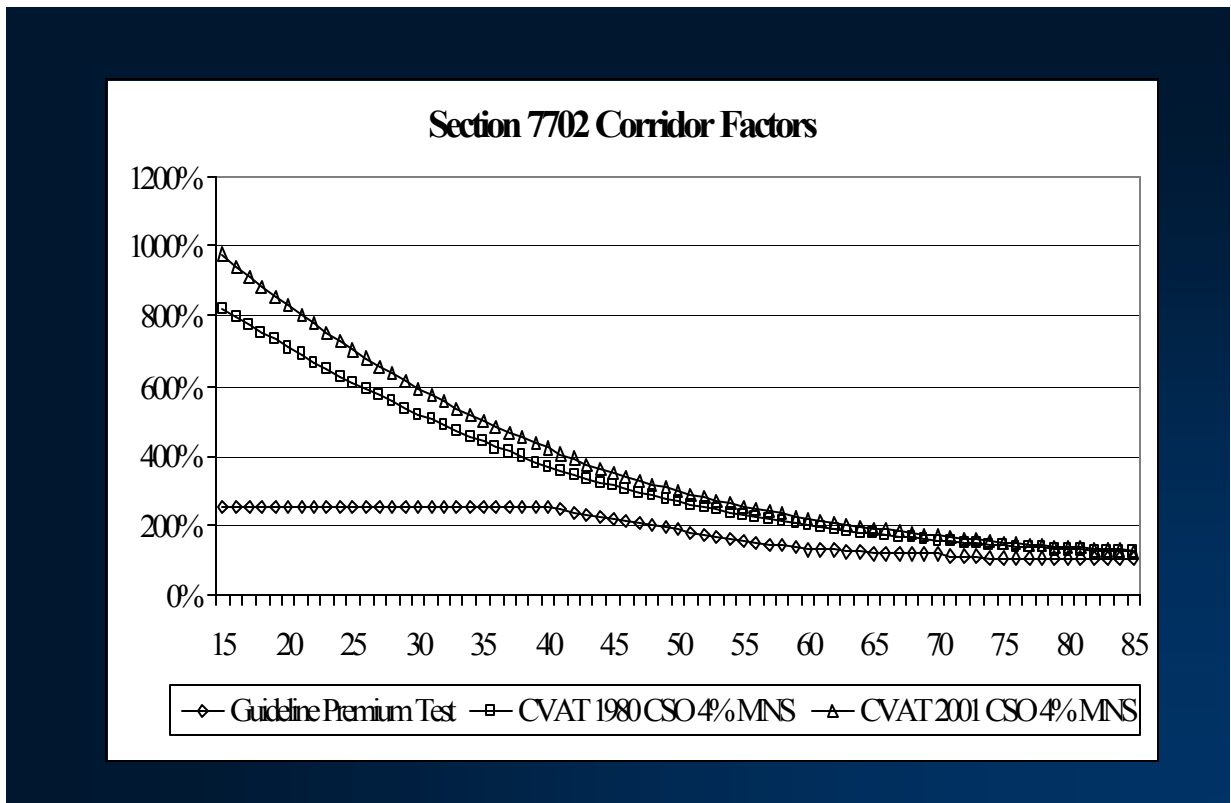




Chart 9

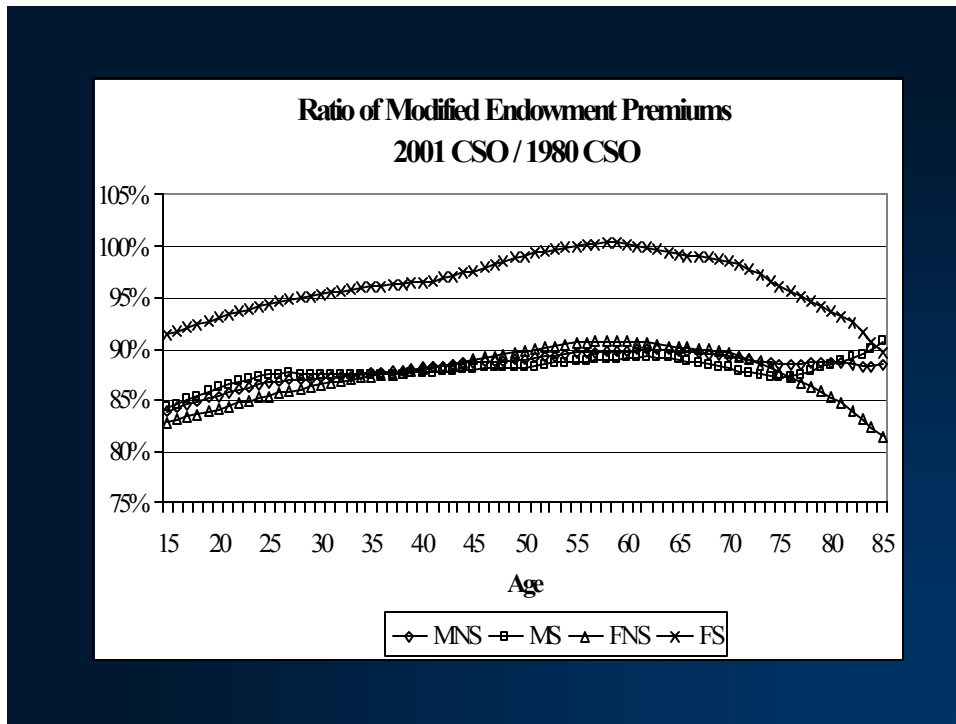


Chart 10

## Change Statutory Reserves to 2001 CSO (after-tax profit margin change)

Plan	Statutory Basis
10 year	+0.0%/+0.0%
20 year	+0.1%/+0.3%
30 year	+0.2%/+1.7%

Competitive/Not So Competitive

Chart 11

### Change in Statutory Deficiency Table (after-tax profit margin change)

Plan	Statutory Basis	Deficiency
10 year	+0.0%/+0.0%	+0.0%/+0.0%
20 year	+0.1%/+0.3%	+3.0%/+0.0%
30 year	+0.2%/+1.7%	+7.7%/+0.0%

Competitive/Not So Competitive

Chart 12

### Deficiency Reserves per \$1,000 Male, Nonsmoker, Issue Age 45, 20 Year Term

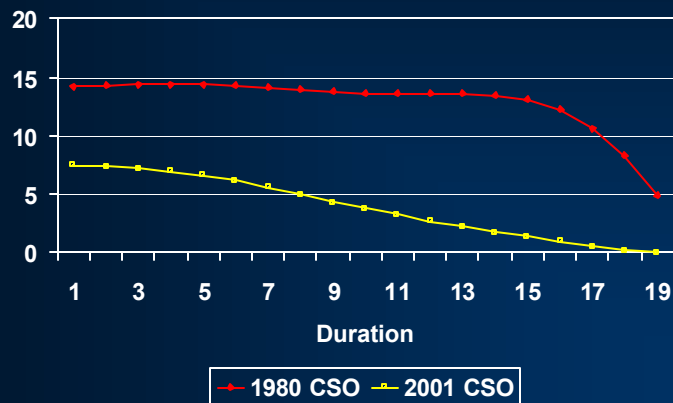


Chart 13

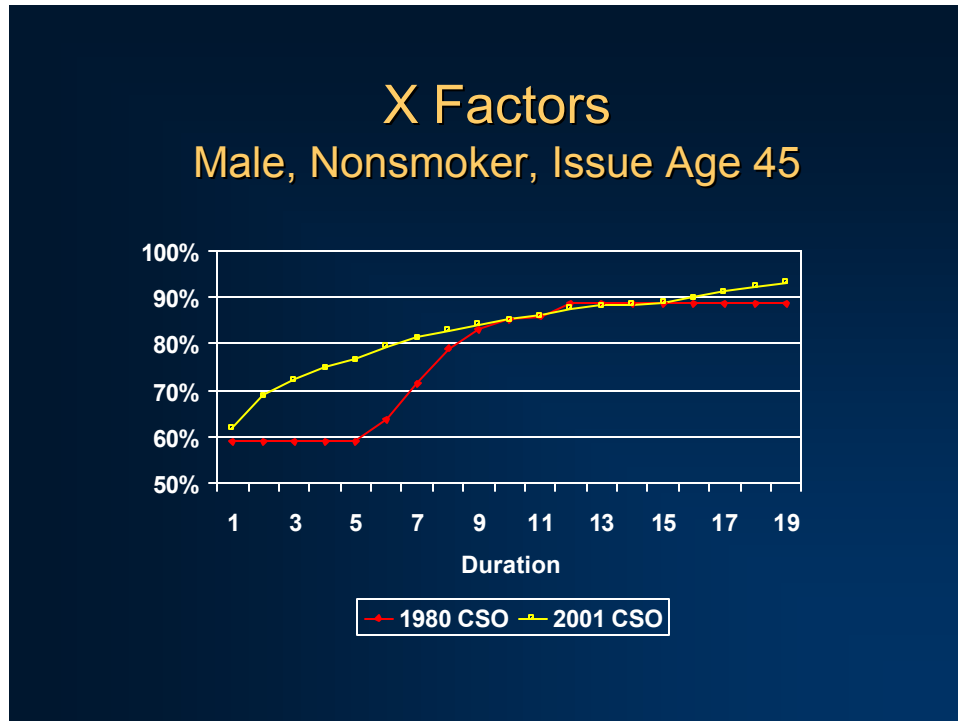


Chart 14

### Change in Cash Value Table (after-tax profit margin change)

Plan	Statutory Basis	Deficiency	CV
10 year	+0.0%/+0.0%	+0.0%/+0.0%	+0.0%/+0.0%
20 year	+0.1%/+0.3%	+3.0%/+0.0%	+0.0%/+0.0%
30 year	+0.2%/+1.7%	+7.7%/+0.0%	+0.0%/+0.0%

Competitive/Not So Competitive

Chart 15

### Change in Tax Reserve Table (after-tax profit margin change)

Plan	Statutory Basis	Deficiency	CV	Tax Table
10 year	+0.0%/ +0.0%	+0.0%/ +0.0%	+0.0%/ +0.0%	+0.0%/ +0.0%
20 year	+0.1%/ +0.3%	+3.0%/ +0.0%	+0.0%/ +0.0%	-1.1%/ -0.1%
30 year	+0.2%/ +1.7%	+7.7%/ +0.0%	+0.0%/ +0.0%	-2.4%/ -0.7%

Competitive/Not So Competitive

Chart 16

### Aggregate Change (after-tax profit margin change)

Plan	Statutory Basis	Deficiency	CV	Tax Table	Aggregate
10 year	+0.0%/ +0.0%	+0.0%/ +0.0%	+0.0%/ +0.0%	+0.0%/ +0.0%	+0.0%/ +0.0%
20 year	+0.1%/ +0.3%	+3.0%/ +0.0%	+0.0%/ +0.0%	-1.1%/ -0.1%	+2.0%/ +0.2%
30 year	+0.2%/ +1.7%	+7.7%/ +0.0%	+0.0%/ +0.0%	-2.4%/ -0.7%	+5.5%/ +1.0%

Competitive/Not So Competitive

Chart 17

### 20-Year Term, Male Premium Rate Change for Competitive Term (no change in after-tax profit margin)

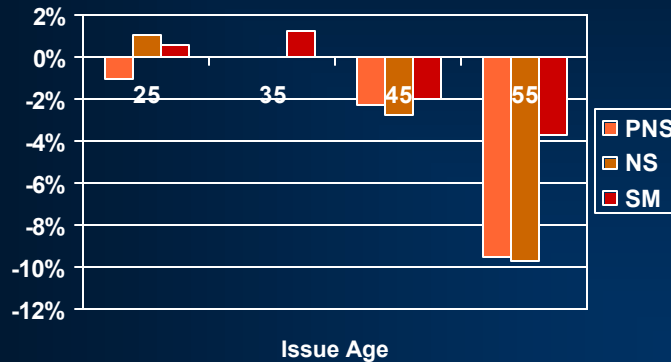


Chart 18

### 20-Year Term, Male Premium Rate Change for Non-Competitive Term (no change in after-tax profit margin)

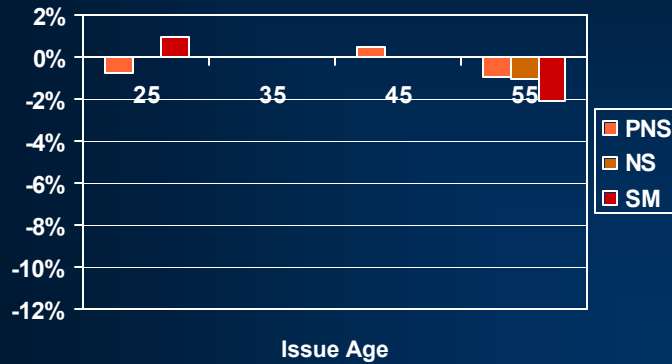


Chart 19

### Change Tax Reserves to 2001 CSO Ultimate

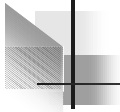
	Profit Margin	IRR
All 1980 CSO	7.7%	13.8%
2001CSO Basic Reserves	9.1%	22.9%
2001 CSO Deficiency Reserves	9.1%	22.9%
2001 CSO Cash Values	11.9%	25.9%
2001 CSO Tax Reserves	10.6%	20.8%

Chart 20

## Change in Tax Limitations

Ratio of 2001 CSO to 1980 CSO Values		
Test Premium	Male	Female
GSP	75 to 85%	75 to 90%
GLP – Option 1	75 to 85%	80 to 85%
7-Pay	80 to 85%	85 to 90%
GLP - Option 2 E@95	75 to 80%	70 to 75%
GLP - Option 2 E@120	150 to 160%	155 to 170%

Chart 21



## Change in Tax Limitations: An Example

<b>2001 CSO ANB Ult: Endowment Age 100 v. 120 (Male 55 NS - Rate per 1,000)</b>		
Test Premium	Endow @ 100	Endow @ 120
GSP	271.60	270.86
GLP-Option 1	25.64	25.52
GLP-Option 2	53.74	107.38
7-Pay	65.39	65.21
NSP	400.01	398.89