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Session 8PD
Implications of the New CSO Mortality Table

Track: Product Development

Moderator: NANCY M. KENNEALLY
Panelists: BARBARA R. GOLD
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CHRIS IAN NOYES

Summary: The 2001 CSO mortality table is completed and is the proposed replacement for the existing 1980 CSO table. Adoption of the new mortality table has far-reaching implications, including effects on reserves, cash values, premiums and maximum cost of insurance rates.

MS. NANCY M. KENNEALLY: The 2001 CSO table is expected to be adopted at the NAIC's December meeting. Let me start by introducing our panelists. Chris Noyes has worked at ING Re for the past five years in the product development and consulting department. In his role as director, Chris oversees all pricing and product development functions carried out by the department. Individual term life insurance has been Chris's primary focus while at ING Re. In fact, nearly 40 percent of all new business reinsured by ING Re is generated by the term products that Chris and his team have developed with their clients. Today Chris plans to discuss the implications of the 2001 CSO table on term insurance, as well as the status of adoption of the new table.

Barbara Gold is with the tax department of Prudential Financial, where, as vice president of tax, she has responsibility for tax reserves and certain aspects of product tax compliance. Before joining Prudential, Barbara was with MetLife and with Guardian and has experience in individual life product development and in various corporate functions. Barbara has spoken at several Society of Actuaries meetings, Actuarial Society of New York meetings, as well as the federal bar. She'll be covering the tax implications of the new 2001 CSO table.

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I'm Nancy Kenneally. I'm a consultant with Tillinghast in our New York office. I've been with Tillinghast for about seven years, and I focus mainly on helping clients around product development and, in particular, with respect to variable life (VL) and variable annuities. My presentation today will focus on the implications of the 2001 CSO table on VL products.

Before getting into VL, I'll just give some brief background on the 2001 CSO table. The development of the 2001 CSO table was driven by two task forces. The Society of Actuaries task force was charged with developing the underlying experience table, or the valuation basic table (VBT). The final VBT table was released in December 2001, and it's on the SOA's Web site, along with the paper describing the table's development.

The second task force from the American Academy of Actuaries then took this experience table and was charged with turning it into a valuation table, which has now become known as the 2001 CSO table. The final table was released in a report in June of this year. If you go to the American Academy of Actuaries Web site, you can find the final tables and a good comprehensive report on its development. The report also contain a lot of analysis, looking at reserves under 2001 CSO versus 1980 CSO for whole life and some term plans.

The 2001 CSO table is expected to be the replacement for the 1980 CSO table as the minimum statutory valuation standard. The 2001 CSO table is based on experience from 1990 through 1995. It's a 25-year select and ultimate table. It has a maturity age of 121. Six tables make up the 2001 CSO table. There are separate composite and also smoker and nonsmoker tables for males and for females.

Several drafts of the model regulation, which are needed to promulgate the use of the 2001 CSO table as the new valuation standard, have been released and circulated. The latest draft is also available on the American Academy of Actuaries Web site, and this is the draft that's expected to be approved in December.

The 2001 CSO table will materially reduce reserves for traditional whole life plans. A chart from the American Academy of Actuaries June 2002 task force report shows whole life reserves for a selected model office after 10 years and the reserves under 2001 CSO as a percentage of the reserves under 1980 CSO. Reserves will generally be reduced by 15 and 20 percent for traditional whole life, with some variation by issue age and also by gender.

Generally male reserves will have higher reductions than female reserves. Because the new table will also be used to calculate nonforfeiture values for traditional whole life plans, the impact on minimum cash values will be similar to the impact on reserves. So you'll see the same general 15–20 percent reduction.

Now let's look at the product implications for VL. VL sales have experienced some downturns over the last 1½ years or so, consistent with the downturn and volatility
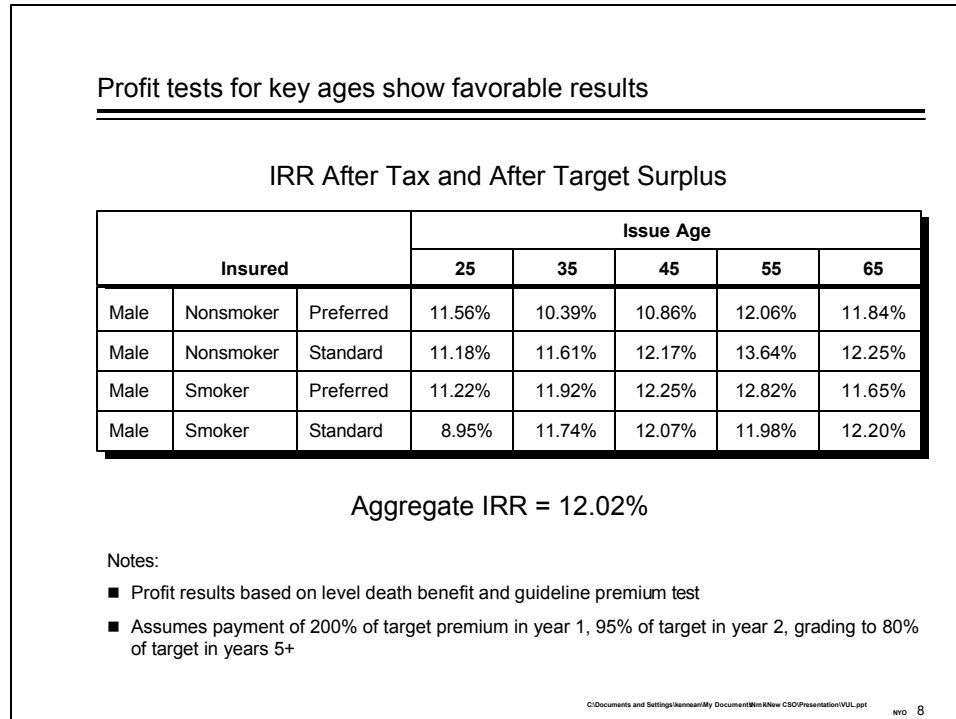
in the equity markets. But VL continues to be an important product for many companies in the insurance industry.

When we set out to gauge the impact of the 2001 CSO table on current products in the VL arena, it became fairly evident that we were going to need to do some profit testing. The first thing we did was to design a prototype product, designed under the 1980 CSO table, that would look similar to many of the products in today's market environment. In designing our prototype product, we imposed a number of constraints. We wanted to price our product to achieve an average level of profitability, of 12 percent statutory internal rate of return, taking into account taxes and target surplus. An additional constraint was that for each individual cell we wanted to achieve at least an 8 percent internal rate of return.

We also wanted the product to be competitive, so we imposed the additional constraint that it should rank in the top quartile of competitiveness. We decided to measure competitiveness based on 20th- and 30th-year cash values. Our pricing assumptions were consistent with average or better-than-average industry experience. We also included many of the features in our products that you would see in today's VL products, such as a stepped-down mortality and expense risk charge, a low front-end load designed to cover just premium taxes, guaranteed cost of insurance (COI) charges equal to 1980 CSO and current COI charges using a reverse select and ultimate scale. By reverse select and ultimate, I'm referring to the margins in the current COI charges. Under the reverse select and ultimate scale, the margins start out at their highest in their first few policy years and then grade off until the current COIs have graded into experience mortality by the end of the select period. We designed a flexible premium contract targeted for the accumulation market. I think that's an important point as we go through the rest of the presentation. The focus is on the retail market. The product pays a full retail agent compensation and is designed under the guideline premium test.

Figure 1 shows the profit test results for our key ages for our prototype product. As you can see, we were able to achieve our aggregate objective of an internal rate of return of just over 12 percent. There's not a whole lot of variation in profitability from cell to cell. We also did achieve our objective of having no individual cell achieving less than 8 percent. In part, the ability to get fairly even profitability by cell was because of the fact that we were able to tweak our COI charges such that each cell would have fairly level profitability.

Figure 1

Profit tests for key ages show favorable results

IRR After Tax and After Target Surplus

Insured			Issue Age				
			25	35	45	55	65
Male	Nonsmoker	Preferred	11.56%	10.39%	10.86%	12.06%	11.84%
Male	Nonsmoker	Standard	11.18%	11.61%	12.17%	13.64%	12.25%
Male	Smoker	Preferred	11.22%	11.92%	12.25%	12.82%	11.65%
Male	Smoker	Standard	8.95%	11.74%	12.07%	11.98%	12.20%

Aggregate IRR = 12.02%

Notes:

■ Profit results based on level death benefit and guideline premium test

■ Assumes payment of 200% of target premium in year 1, 95% of target in year 2, grading to 80% of target in years 5+

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Our competitive results were also favorable. Figure 2 shows internal rates of return on cash value after 20 and 30 years for our prototype product under several issue ages, face amounts and premium funding scenarios. The far right columns show the internal rates of return as well as the rank. The industry numbers are from a population of roughly 94 products in the market today. These are actually taken from Tillinghast's VALUE Survey. If you look at the ranks—1 being the best and 94 being the worst—you can see that not only did we achieve our competitive objective of being in the top quartile, but in many cases we're also in the top 10th percentile. We were able to design a pretty competitive product.

Figure 2

Competitive results were also very favorable

Internal Rate of Return on Cash Values at 10% Gross Rate
Male, Nonsmoker, Best Underwriting Class

Cell				Industry			Prototype VUL	
Issue Age	Face Amount	Annual Premium	Return	Best	Median	Worst	IRR	Rank*
45	$100,000	$1,500	20-year 30-year	6.60% 7.42%	4.99% 6.52%	3.60% 5.20%	5.84% 7.09%	7 6
55	$250,000	$7,500	20-year 30-year	7.69% 8.73%	6.27% 7.34%	3.45% 5.04%	7.06% 7.83%	4 4
45	$500,000	$7,500	20-year 30-year	7.03% 7.67%	5.82% 7.02%	3.09% 4.69%	6.38% 7.43%	13 11
55	$1,000,000	$25,000	20-year 30-year	7.08% 7.77%	5.78% 7.09%	3.35% 5.04%	6.60% 7.59%	6 5
35	$250,000	$2,000	20-year 30-year	6.81% 7.43%	5.29% 6.58%	3.82% 5.10%	6.04% 7.03%	8 10
45	$250,000	$8,500 (7 pay)	20-year 30-year	8.58% 8.97%	6.81% 7.42%	5.05% 6.15%	7.45% 7.93%	5 6

Illustrations assume annual premiums are paid in all years unless noted otherwise.
*Rank out of average of 94 products (1 being the best and 94 being the worst).
Source: Tillinghast – Towers Perrin VALUE Survey.

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What happens when we switch to the 2001 CSO table? The first thing we did was to switch out the 1980 CSO table and replace it with the 2001 CSO table. That meant that our guaranteed COI rates were then 2001 CSO, and we used that table in our reserving calculations. The first thing that became readily apparent, because of the reverse select and ultimate structure that we're using for our current COI rates, was that in a number of cases our current rates exceeded our guaranteed 2001 CSO rates. This chart summarizes the durations that were affected (Figure 3).
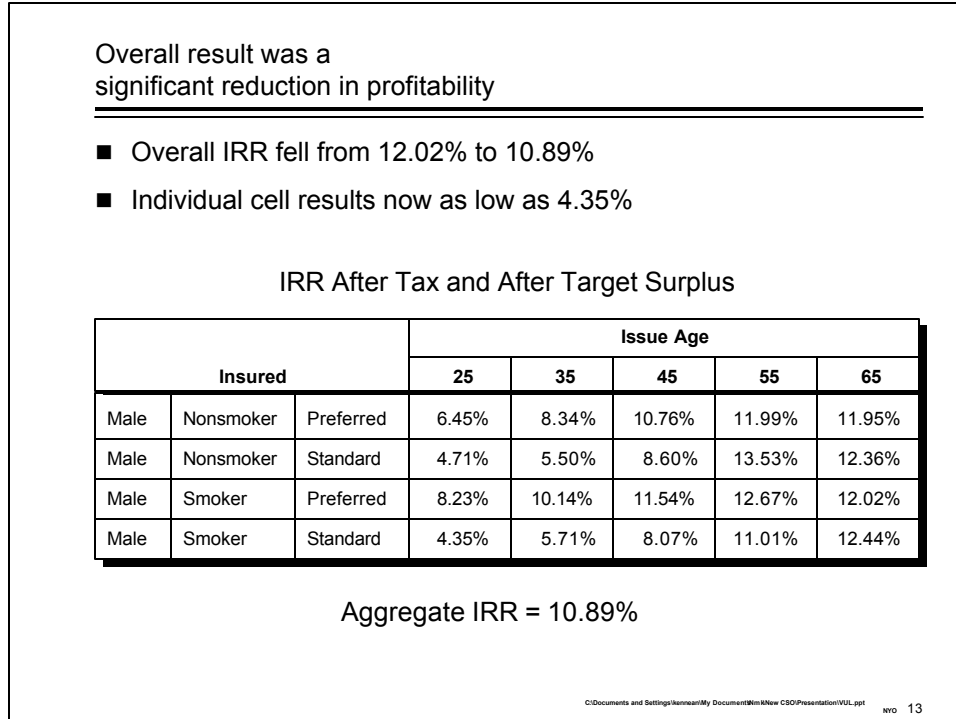
Figure 3

What happens when we switch our
current product to the new 2001 CSO basis?

■ Current cost of insurance rates required capping at several
  durations and risk classes so as not to exceed 2001 CSO ultimate,
  male and smoker distinct

Durations Affected by 2001 CSO

Male Insured	Issue Age				
	25	35	45	55	65
Preferred Nonsmoker	1 – 20	1 – 19	1 – 5		
Standard Nonsmoker	1 – 20	1 – 19	1 – 15		
Preferred Smoker	1 – 20	1 – 10	3 – 6		
Standard Smoker	1 – 20	1 – 20	1 – 19	12 – 20	15 – 20

Overall result is that COI margins — a significant source
of earnings for VUL — are considerably reduced

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Looking down the columns, which are the issue ages, you see that it was mainly the younger issue ages that were affected the most. Looking across by row or risk class, you see that the smoker cells were also affected the most. So with these caps, the overall result was that we had a significant decrease in our COI margins, which is obviously a considerable source of profitability.
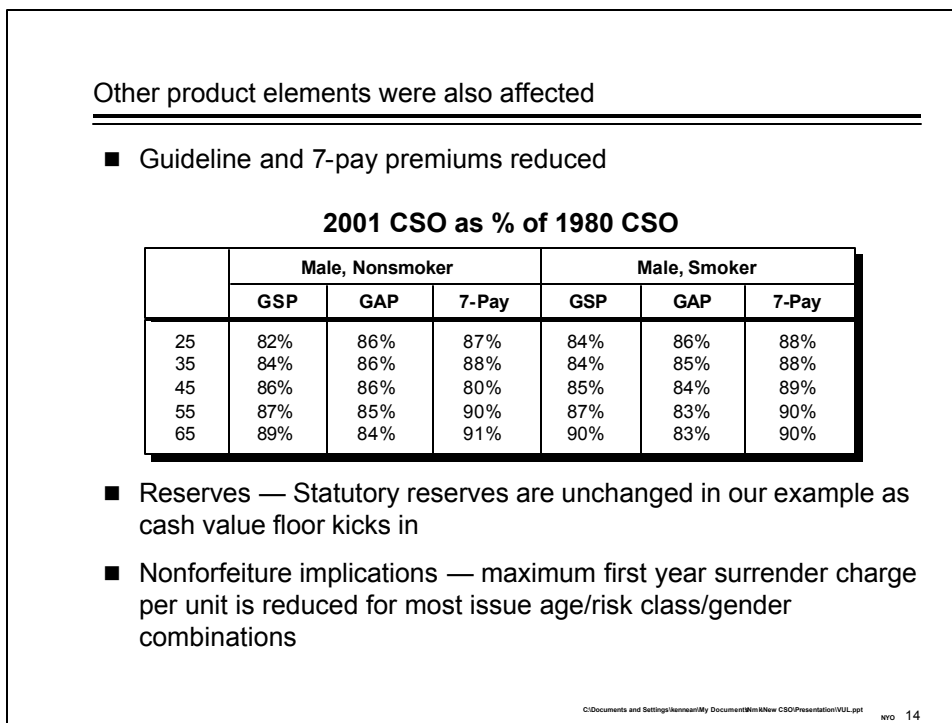
So with just that one change, in which we capped our current COIs at the 2001 CSO, we reran our profit tests. Our overall internal rate of return for our model office fell from just over 12 percent to just about 10.9 percent, which, in and of itself, is perhaps not a significant reduction and may still be an acceptable level of profit (see Figure 4). But the interesting thing to note is that now, if you look at the individual cell results, there is much more variation by issue age and by risk class on the profitability, and we no longer achieve our objective of achieving at least an 8 percent internal rate of return by cell. In fact, we have some cells earning as low as 4, 5 and 6 percent.

Figure 4

Overall result was a
significant reduction in profitability

- Overall IRR fell from 12.02% to 10.89%

- Individual cell results now as low as 4.35%

IRR After Tax and After Target Surplus

Insured			Issue Age				
			25	35	45	55	65
Male	Nonsmoker	Preferred	6.45%	8.34%	10.76%	11.99%	11.95%
Male	Nonsmoker	Standard	4.71%	5.50%	8.60%	13.53%	12.36%
Male	Smoker	Preferred	8.23%	10.14%	11.54%	12.67%	12.02%
Male	Smoker	Standard	4.35%	5.71%	8.07%	11.01%	12.44%

Aggregate IRR = 10.89%

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Other product elements were also affected. Our guideline premiums and seven-pay premiums were affected. Figure 5 shows the ratio of guideline premiums and seven-pay premiums under 2001 CSO as a percentage of 1980 CSO for male smokers and nonsmokers. In general, the guideline premiums and the seven-pay premiums were reduced about 10–15 percent. This reduction directly impacts the maximum amount of premium that can be paid into a given contract.

Figure 5

	Male, Nonsmoker			Male, Smoker		
	GSP	GAP	7-Pay	GSP	GAP	7-Pay
25	82%	86%	87%	84%	86%	88%
35	84%	86%	88%	84%	85%	88%
45	86%	86%	80%	85%	84%	89%
55	87%	85%	90%	87%	83%	90%
65	89%	84%	91%	90%	83%	90%

Another item that could be affected are reserves. For our particular case, reserves were really not affected. We're using the standard commissioner's reserve valuation method with the floor of cash value. Because we designed a product for the accumulation market, and we have assumed a pretty high funding pattern for the product, the cash value actually kicks in as the reserve in the early durations. So statutory reserves were unchanged for our particular product.

Another element that could be affected would be nonforfeiture values. The maximum first-year surrender charge per unit is reduced under the new 2001 CSO table for most issue ages, risk classes and gender combinations. Of course, it will not affect the ages and risk classes for which the $60 cap is in place. Surrender charges were not affected for our prototype product, but this could certainly affect products for which the surrender charge has been designed to be at its maximum.
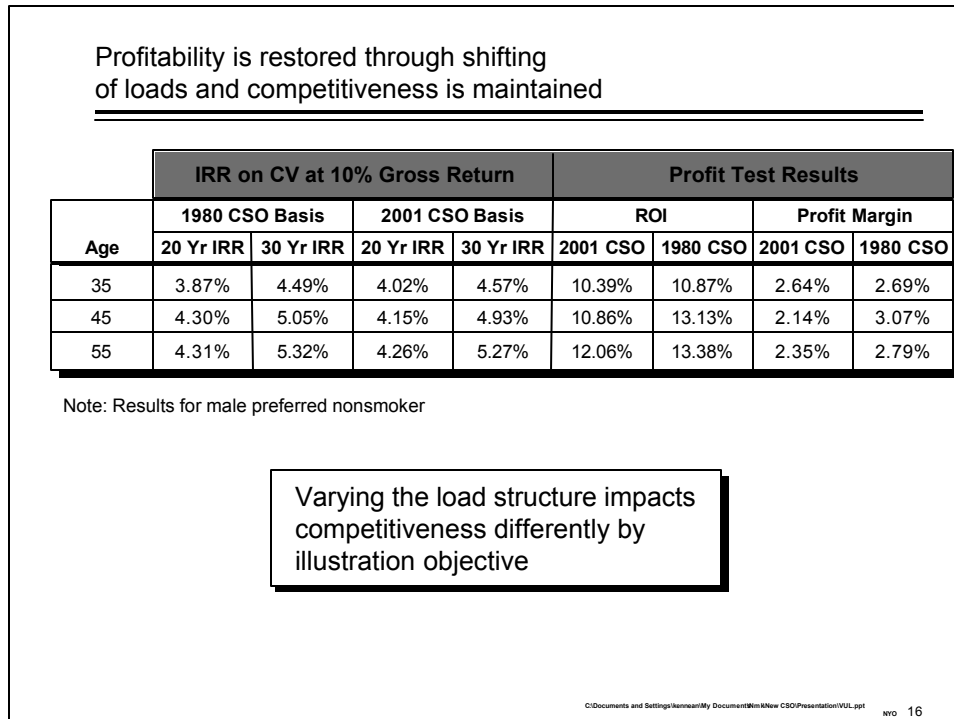
So then we looked at what we needed to do to get back to our original level of profitability. First, we revised our current COI scale. We wanted to make sure we left ourselves some margin so that if in the future we needed to raise our current COI rates, we would have that ability. We scaled back our current COIs, which meant we needed to add loads or increase existing loads.

So we needed to increase our mortality and expense (M&E) charge by five basis points in all years. We also needed to increase our front-end premium load from 3.5 to 5 percent. Then we also needed to add another load, a per-unit load of 10 cents

per $1,000 in the first 15 years for all ages. All of this together brought our aggregate profitability back to about 11.95, just under 12 percent. So we're pretty much back to where we were under the 1980 CSO prototype product.
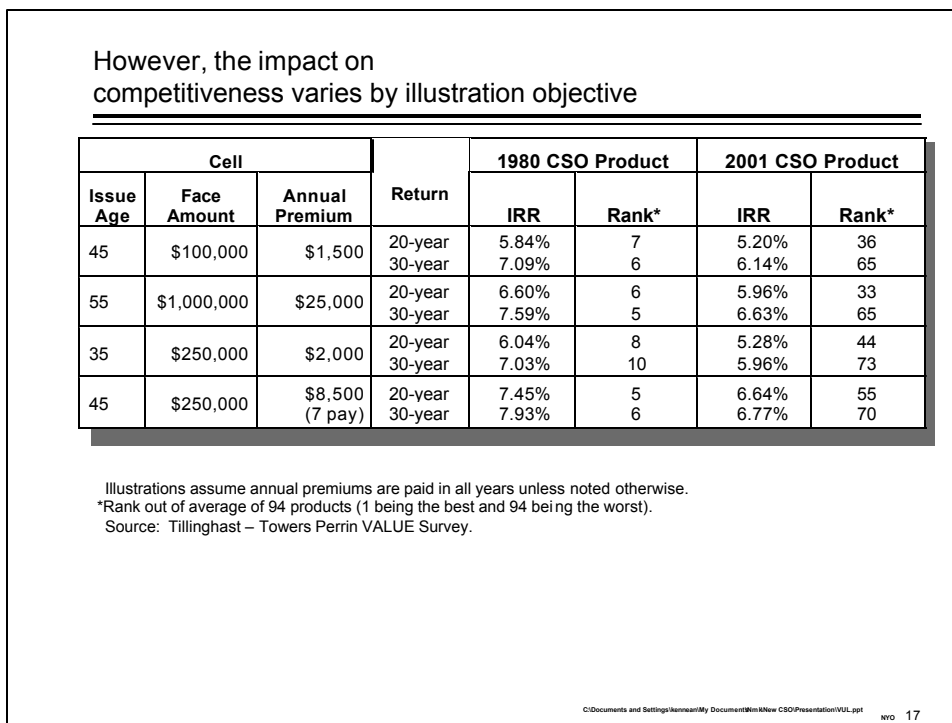
By restoring profitability, by shifting the loads and introducing new loads, we also were able to maintain our competitiveness. Figure 6 shows internal rates of return under 1980 CSO and 2001 CSO as well as the results from our profit tests. I think the key takeaway from this slide is that we've essentially just shifted our loads from COI margins into other types of loads: the per-unit load, increased M&E and increased premium load. Our profitability is comparable to what it was before, and our competitiveness has also been pretty much maintained for these particular funding level, issue age, and face amount combinations you see here.

Figure 6

Profitability is restored through shifting
of loads and competitiveness is maintained

	IRR on CV at 10% Gross Return				Profit Test Results			
	1980 CSO Basis		2001 CSO Basis		ROI		Profit Margin	
Age	20 Yr IRR	30 Yr IRR	20 Yr IRR	30 Yr IRR	2001 CSO	1980 CSO	2001 CSO	1980 CSO
35	3.87%	4.49%	4.02%	4.57%	10.39%	10.87%	2.64%	2.69%
45	4.30%	5.05%	4.15%	4.93%	10.86%	13.13%	2.14%	3.07%
55	4.31%	5.32%	4.26%	5.27%	12.06%	13.38%	2.35%	2.79%

Note: Results for male preferred nonsmoker

Varying the load structure impacts
competitiveness differently by
illustration objective

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However, the impact on competitiveness varies by illustration objective. Just to highlight that, Figure 7 shows a few of the issue age, face amount and funding level cells that we saw before under 1980 CSO. Where we once ranked in the top 10th percentile or top quartile, we see that the competitiveness for these particular scenarios has been quite adversely affected. Where we used to be ranked sixth or seventh, we're now ranked in the mid-30s.

Figure 7

However, the impact on
competitiveness varies by illustration objective

Cell			Return	1980 CSO Product		2001 CSO Product	
Issue Age	Face Amount	Annual Premium		IRR	Rank*	IRR	Rank*
45	$100,000	$1,500	20-year 30-year	5.84% 7.09%	7 6	5.20% 6.14%	36 65
55	$1,000,000	$25,000	20-year 30-year	6.60% 7.59%	6 5	5.96% 6.63%	33 65
35	$250,000	$2,000	20-year 30-year	6.04% 7.03%	8 10	5.28% 5.96%	44 73
45	$250,000	$8,500 (7 pay)	20-year 30-year	7.45% 7.93%	5 6	6.64% 6.77%	55 70

Illustrations assume annual premiums are paid in all years unless noted otherwise.
*Rank out of average of 94 products (1 being the best and 94 being the worst).
Source: Tillinghast – Towers Perrin VALUE Survey.

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So shifting margins and determining the right load structures are not trivial exercises, and it will take some time to get the right combination of loads. It also will vary from company to company, depending on your particular target market and illustration objectives.

Until now, the implications that we've talked about have been fairly negative, with the reductions in guideline premiums and COIs. On a positive note, the table's extended maturity age, to 121, may eliminate the need for extended maturity provisions, which are common on so many permanent life products, not just VL. This is probably a positive note for many companies because both insurance company practice with respect to structuring these types of provisions, as well as state insurance department views on how they should be structured, vary quite a lot. In some cases state insurance department views are conflicting, which either causes there to be state-specific provisions or perhaps a particular provision is not available in a particular state. With the adoption of the new table, the need for these provisions should go away.

Single-premium variable life (SPVL) is still a fairly small market but will also be affected by the changes to the new 2001 CSO table. Many of today's SPVL products use the cash value accumulation test and asset-based COI charges capped at 1980 CSO based on a traditional net amount at risk calculation.

Switching to 2001 CSO will reduce net single premiums under the cash value accumulation test, which will result in higher death benefits per unit for SPVL contracts and an increased net amount at risk. That is an unwanted consequence for these types of products since SPVL is really targeted as an investment-oriented accumulation product. So the increased death benefit net amount at risk is not wanted in that market. Also, the asset-based COI charges, just like we saw on the accumulation product, will now hit the 2001 CSO guarantee cap more easily.

The survivorship VL products will also suffer from reduced COI margins, although I would expect the result to be less significant here. For survivorship VL products the COI margins, because of Frasierized mortality rates, are already very small. Existing designs typically already have some type of a per-unit load or have already adjusted for having small COI margins, so this may not have as pronounced an effect here.

To sum up, the 2001 CSO table has significant implications for VL. As we saw, COI margins will likely be significantly reduced and will require a shifting of loads. Maximum surrender charges, in some cases, will be reduced. Maximum funding limits through the reductions in the guideline premiums and the seven-pay premiums will also be reduced. Statutory reserves for adequately funded or high-funded contracts are likely to be unchanged from where they are today. And, as we talked about, there could be a possible elimination of extended maturity issues.

No-lapse guarantee premiums will also likely be reduced because of the switch to 2001 CSO. I'm referring to guaranteed minimum death benefits on VL products for which you pay the stipulated premium to guarantee that you'll stay in force for a particular period of time regardless of fund performance. Alternatively, no-lapse premiums may stay at their current levels, but you may be able to extend the period for which you guarantee the no lapse.

We expect that product designs will change from what they look like today to accommodate the shift in margins from COI charges, generally to more visible loads. Embedded COI loads were not as visible to either the consumer or distributor. Moving those into, perhaps, an increased percentage of premium load or an additional per-unit load will make these much more visible.
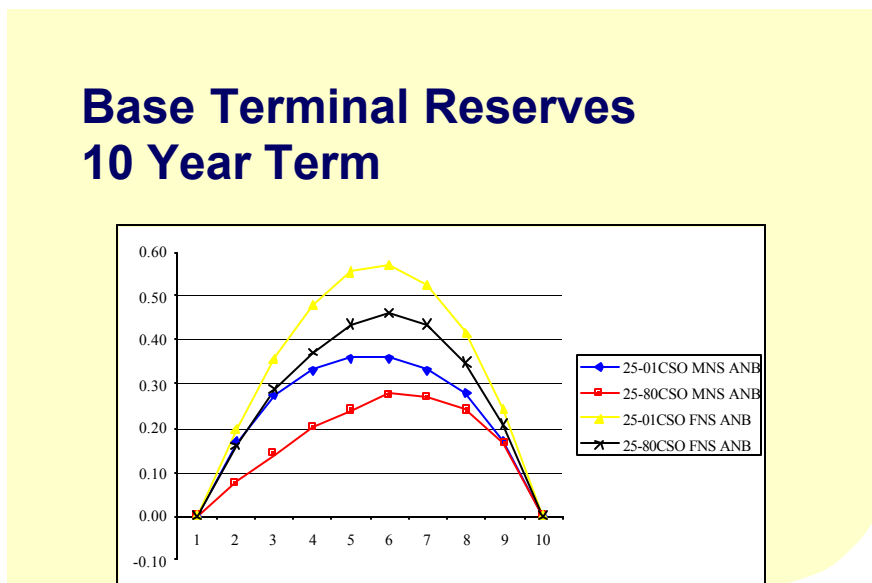
Getting the right load structure and determining how to shift from COI margins into other margins is not a trivial exercise and will take some time and many trials to determine the right load structure. For VL products, while we're in the transition mode for 2001 CSO, we might expect, given the implications that we just talked about, that companies might be slow to adopt the new basis for their VL products and may look to transition for other products before they do for VL.

Those are my comments on VL. I now will turn it over to Chris, who will talk about the implications with respect to term insurance.

MR. CHRIS IAN NOYES: I will talk about the implications of the new CSO table with regard to term insurance, and then we'll talk a little bit about the status of table adoption at the end of the presentation. First of all, I want to talk about the implications for term and about the reserve levels. I will talk about the base reserves and then the deficiency reserves. After that, we'll move into an actual prototype set of term products that I developed specifically for this, and we'll see the implications and the impact of the table.

My presentation includes about 30 graphs, and I don't intend to go through all of them. The presentation is on the Society's Web site, so you can print out the graphs in larger detail if you'd like. I think there are about 20 graphs that show the 10-year term, about 10 more for the 20-year, and then about eight for the 30-year term.

Figure 8

**Base Terminal Reserves
10 Year Term**

Legend:
- 25-01CSO MNS ANB
- 25-80CSO MNS ANB
- 25-01CSO FNS ANB
- 25-80CSO FNS ANB

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Each graph shows a particular issue age—in Figure 8, 25-year-olds—and then it shows either nonsmokers or smokers. Both sexes are on the graph, and they're all age nearest birthday. The graphs show base terminal reserves; there are no deficiency reserves here. There's no ½ * Cx floor, and there's no unearned premium reserve or anything like that. It's just a base reserve.

You can see, for example, that in this case the 2001 CSO table for the female nonsmoker, a 25-year-old, creates a higher reserve than the 1980 CSO table created. If you flip through all the graphs, there are eight places where that

occurs—the 25-year-olds for the 10-year term; the 25-year-olds, 45-year-olds and 55-year-olds for nonsmokers; and the 25-year-olds and 45-year-olds for smokers. On the 20-year term product, that happens at just female smoker, age 45, and on the 30-year term product, this happens at the 35- and 45-year-old female smoker. Everywhere else, the new table creates lower reserves than the current 1980 CSO table.

The way I will cover deficiency reserves may be a little bit unusual, but I'll talk a little bit about this later too. There are so many things that go into deficiency reserves, depending on the company—mortality levels, the X-factors, and so on. I took a very formulaic approach. Each of these tables shows the premium rate per $1,000, such that one penny less would create a deficiency reserve (Figure 9). My premise was a $250,000 face amount policy with a $50 policy fee. If you look down the left side, you have X-factors from 20 up to 90 percent.

Figure 9

Deficient Premiums

Premium rate per 1,000 such that one penny less creates a deficiency reserve (out to 4 decimals) $250,000 face amount with $50 policy fee

10 Year Level Term

Male Nonsmoker - 2001CSO - ANB

X Factors	25	35	45	55	65	75
20%	< 0.00	0.02	0.28	0.90	2.41	6.63
30%	< 0.00	0.13	0.51	1.45	3.71	10.01
40%	0.08	0.24	0.75	2.00	5.00	13.37
50%	0.14	0.35	0.98	2.55	6.29	16.70
60%	0.21	0.46	1.22	3.09	7.57	20.01
70%	0.28	0.56	1.45	3.64	8.86	23.29
80%	0.35	0.67	1.69	4.18	10.14	26.56
90%	0.42	0.78	1.92	4.73	11.41	29.80

Female Nonsmoker - 2001CSO - ANB

X Factors	25	35	45	55	65	75
20%	< 0.00	< 0.00	0.20	0.63	1.61	4.82
30%	< 0.00	0.05	0.40	1.04	2.51	7.30
40%	< 0.00	0.13	0.60	1.46	3.41	9.76
50%	0.05	0.21	0.80	1.87	4.31	12.21
60%	0.09	0.29	1.00	2.28	5.20	14.65
70%	0.14	0.37	1.20	2.69	6.10	17.07
80%	0.19	0.45	1.40	3.10	6.99	19.47
90%	0.24	0.53	1.59	3.51	7.88	21.86

10 Year Level Term

Male Nonsmoker - 80CSO - ANB

X Factors	25	35	45	55	65	75
20%	< 0.00	0.08	0.35	0.88	3.58	11.52
30%	0.06	0.22	0.62	1.41	5.46	17.30
40%	0.14	0.35	0.89	1.95	7.32	23.01
50%	0.23	0.49	1.17	2.48	9.17	28.67
60%	0.31	0.63	1.44	3.01	11.02	34.26
70%	0.39	0.77	1.71	3.55	12.85	39.80
80%	0.48	0.90	1.98	4.08	14.68	45.29
90%	0.56	1.04	2.25	4.61	16.49	50.71

Female Nonsmoker - 80CSO - ANB

X Factors	25	35	45	55	65	75
20%	< 0.00	0.02	0.19	0.45	2.19	9.09
30%	< 0.00	0.12	0.38	0.78	3.37	13.67
40%	0.02	0.23	0.57	1.10	4.55	18.21
50%	0.07	0.34	0.76	1.43	5.73	22.71
60%	0.12	0.44	0.95	1.75	6.90	27.17
70%	0.17	0.55	1.14	2.07	8.07	31.59
80%	0.23	0.65	1.33	2.40	9.23	35.97
90%	0.28	0.76	1.52	2.72	10.38	40.31

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The way you read that, for example, is for a male nonsmoker, age 45, under the 2001 CSO table, if the premium rate is less than 98 cents per $1,000, plus a $50 policy fee, with an X-factor of 50 percent in all durations—in this case, for 10 durations—you'd get a deficiency reserve. In this case we have nonsmoker for male and female. There is also a graph for the smokers, again for the 10-year product. I have a couple more on the 20-year and the 30-year for nonsmoker and smoker.

You might notice that for the 25-year-old female nonsmoker, the graph says less than zero for a 20 percent X-factor. What that really means is that you will collect a

$50 policy fee on this policy, which translates on a per-unit basis in this case to 20 cents. So, if you wanted to calculate this all out, you would get a deficiency reserve when the premium is less than a total of 20 cents per unit. So you must factor in the policy fee when you read these charts. I thought these might be helpful. If you have term products, you can look at your rates per $1,000 to see if they would or would not be deficient.

For the 30-year term product, I went out only to age 55. I don't think any 30-year term is sold beyond that for cash value reasons. As I mentioned, when I started doing this I did not detect any discernible pattern of deficiency reserves such that they all go up or they all go down from the 1980 CSO to the 2001 CSO. It depends on the premium rate, the X-factor, the issue age and whether you're talking about males or females or smokers or nonsmokers over the life of the term product. If you decide to hold an X-factor that varies by age versus by class, that will obviously have an impact as well.

Now I'll go through the case study that I put together. We'll go through the assumptions I used to develop these term products and then talk a little bit about the impact of the new table. We're looking at a portfolio of term that's 10-, 20-, and 30-year level term, age nearest birthday and fully guaranteed. The ART rates after the level period will be equal to twice the CSO table, whether that be the 1980 or the 2001. All of the products were priced to attain a 12 percent ROI after reinsurance and after tax.

The pricing ages are pretty typical in the industry, 25 through 75 on the 10-year term product, 25 through 65 on the 20-year term product, and 25 through 45 on the 30-year term product. Those generally are constrained at the high end by cash value. So some companies don't offer out quite that far. Commissions we're paying the agents in this case are 120 percent and 5 percent in the renewal years. The expenses are purely intended to cover underwriting and administration, so you may have more or less expense in your own term products. These are purely based on the fact that more underwriting is done at the older ages. I'm also trying to quantify somewhat the fact that at the different face amounts within an age group you have more or less underwriting. The first year per policy expense does include an administration expense, and then in the renewal years there is a $25 per-policy administration expense.

There's inflation of 3 percent and premium tax of 2.5 percent. The lapse rates grade down from 10 to 4 percent. So, for example, in a 10-year product, at the 10th year, 100 percent of the business goes away. I'm not pricing in any period of the tail, so all reserves and required surplus are being released. But on a 30-year product, the ultimate lapse rate turns out to be 4 percent for quite some time. The surplus values are percentages of the retained factors—the net amount at risk, the reserves, and the premium for this product.

The products were priced with a $250,000 average face amount, a $50 policy fee—that's to be coincident with the graphs and tables I showed earlier—a 7 percent earned rate, and a 35 percent tax rate. All the business was priced annual mode, and one of the key assumptions is 80 percent first dollar quota share coinsurance. Most of the term nowadays is coinsured, and in this particular case I'm assuming that the reinsurer is taking the reserves offshore. A letter of credit is backing all of the ceded reserve.

The pricing horizon is equal to the level term period. The particular products I developed have five classes: super-preferred, preferred and standard nontobacco, and then preferred and standard tobacco classes, and those are the relative percentages, of the 75–80 mortality table, for the pricing mortality (Figure 10). The X-factors I developed under the 1980 CSO and then under the 2001 CSO were based on this pricing mortality, with a 10 percent provision for adverse deviation (PAD). I simply calculated the X-factors using the recipe out of the regulation—it couldn't be less than 20 percent, had to increase by duration, the Qx's in the first five years had to be at least as big, and I think the present value also has to be at least as great. So the X-factors meet the regulation. There is a 10 percent PAD included on this mortality just to calculate X-factors.

Figure 10

Case Study Assumptions

Pricing horizon equal to level term period

Mortality (as % of SOA 7580 ANB):
- Super preferred: 20%
- Preferred: 25%
- Standard: 35%
- Preferred Tob: 50%
- Standard Tob: 80%

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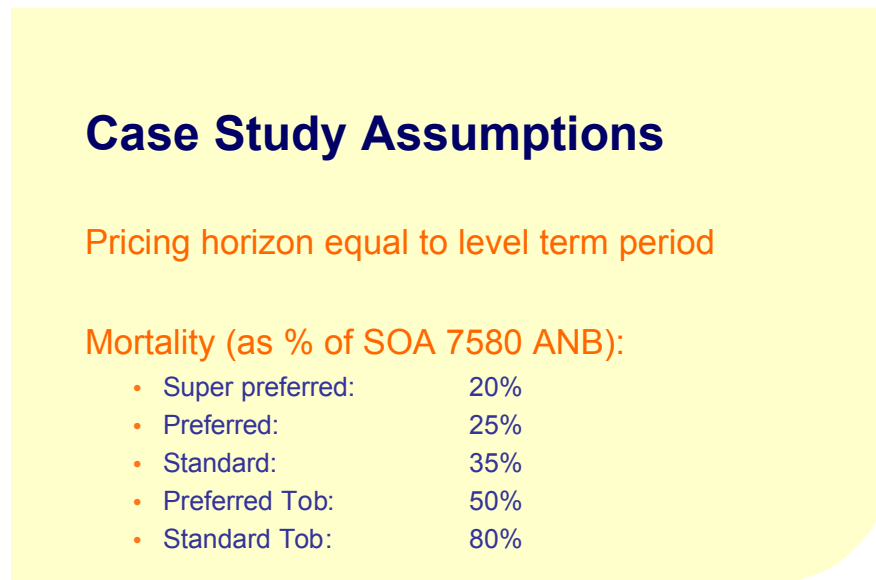
So those are the assumptions that went into the product. Now I'm going to change the premiums to get back to the same profit for these products once I put in the new 2001 CSO table. Given that this is simply substituting one table for another,

obviously you have two choices. You can take higher or lower profits, depending on what the case may be, or you can change your premiums. I chose to change premiums. Obviously every company has a choice just to put the new table in and accept higher profits.

So these are the premiums that we're starting with under the 1980 CSO (Figure 11) based on all the assumptions I just went through. I checked these premiums to make sure there were no anomalies by age and sex and class and by the various products. You could actually see this portfolio on the market. Any resemblance that it shares with actual term products out on the market is purely coincidental. I just made all this up for this presentation, so if these are exactly your premium rates, I'm sorry. They weren't intended to be.

Figure 11

Premiums under 80CSO

10 Year Term Premium Rates per 1,000

	25	35	45	55	65	75
mspn	0.43	0.45	0.92	2.30	6.33	15.95
mpn	0.54	0.60	1.24	2.61	7.29	17.35
msn	0.65	0.71	1.51	3.37	9.56	25.15
mpt	0.93	0.95	2.09	4.88	13.11	34.01
mst	1.11	1.42	3.18	7.30	19.19	46.30
fspn	0.32	0.38	0.75	1.67	3.91	9.24
fpn	0.39	0.45	0.89	1.90	4.46	10.54
fsn	0.51	0.56	1.14	2.31	5.50	13.10
fpt	0.64	0.77	1.67	3.42	7.70	18.23
fst	0.87	1.10	2.33	4.70	11.00	26.04

20 Year Term Premium Rates per 1,000

	25	35	45	55	65
mspn	0.65	0.66	1.65	3.88	13.33
mpn	0.88	0.89	1.99	5.22	17.88
msn	1.13	1.14	2.57	6.70	22.93
mpt	1.45	1.73	4.05	9.15	25.50
mst	2.32	2.52	5.32	11.27	30.11
fspn	0.47	0.58	1.19	2.94	8.35
fpn	0.58	0.72	1.50	3.66	10.89
fsn	0.73	0.91	1.83	4.46	13.26
fpt	0.95	1.31	2.95	6.77	15.83
fst	1.19	1.64	3.69	8.46	17.00

30 Year Term Premium Rates per 1,000

	25	35	45
mspn	0.92	1.15	2.76
mpn	1.22	1.40	3.40
msn	1.62	1.86	4.49
mpt	2.11	2.98	7.92
mst	2.62	3.34	8.87
fspn	0.75	0.89	1.83
fpn	0.90	1.07	2.35
fsn	1.22	1.44	3.17
fpt	1.50	2.14	5.00
fst	1.70	2.42	5.63

To go from the 1980 CSO to the 2001 CSO, I first reflected the new 2001 CSO table in the reinsurer's side of the pricing. I changed the net reinsurance cost so that the reinsurer's side of the pricing got back to the same level of profit that the reinsurer was attaining under the 1980 CSO. I did this by class. If the reinsurer was more or less leveraging the products by class, that was still in the pricing. I then recalculated X-factors, as I mentioned, with the same pricing mortality, but obviously with the new 2001 CSO. So the X-factors changed appropriately for this

exercise. Then I went into the direct or the ceding company side of the pricing. I reflected the new net reinsurance cost and the new 2001 CSO table, and I simply solved for premiums that got us back to a 12 percent ROI, still after tax, after reinsurance (Figure 12).

Figure 12

Premiums under 01CSO

Following percentages show change to 80CSO-based premium rates per 1,000

	10 Year	20 Year	30 Year
mspn	-1.5%	-6.0%	-13.0%
mpn	-1.0%	-4.0%	-8.5%
msn	-1.0%	-3.5%	-5.0%
mpt	-1.0%	-3.5%	-4.5%
mst	-0.5%	-1.0%	-2.5%
fspn	-2.5%	-5.0%	-12.0%
fpn	-2.0%	-3.5%	-9.0%
fsn	-1.5%	-3.0%	-6.0%
fpt	-1.0%	-0.5%	0.0%
fst	-1.0%	-0.5%	5.5%

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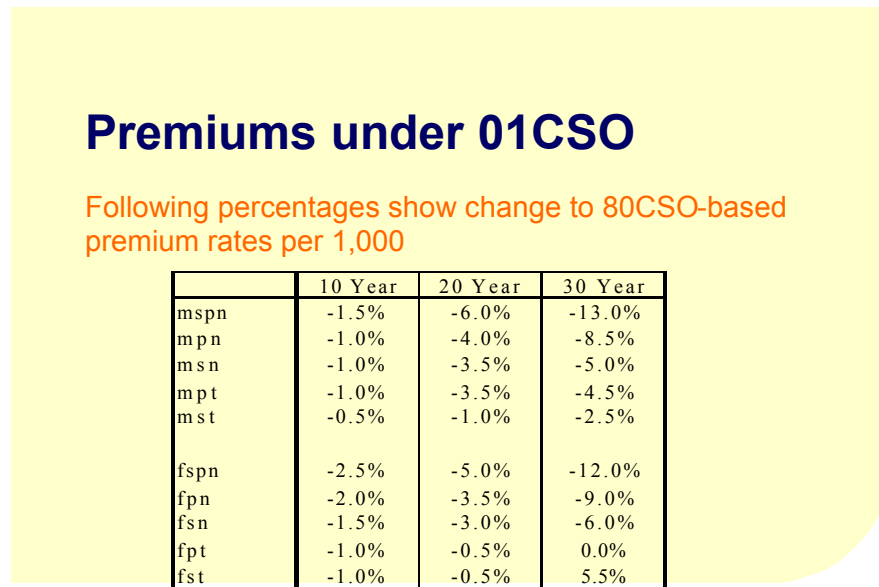
It's probably important to note that I didn't make any effort to change the slope of the premiums within a class, so the relative competitive level of the 35-year-olds is the same as the 55-year-olds'. For example, you could take a 6 percent reduction in your rate per $1,000 on the 20-year term, male, super-preferred, nontobacco. That's how you should read this table. The key results for this particular portfolio are that the premium changes are larger as the level term period increases. In fact, the female tobacco rates were the least affected, and they had to increase on the 30-year term, I think, for the standard class. The impact of the change in tables is greater at the better risk classes.

One thing to keep in mind is that this type of portfolio assumes that the reinsurer is taking the reserves offshore. If you're taking the reserves directly offshore with a subsidiary of your own, the impact may be less with the new table. If you're already managing your capital as efficiently as possible and leveraging the redundant reserves with a letter of credit (LOC), obviously the impact of making the switch from the 1980 to the 2001 CSO may be somewhat reduced. Also, take into account that LOC costs from about two or three years ago, when everybody started

looking at this for XXX, have gone up since then, which can also have an impact on this.

Going forward, unless companies decide to use the new CSO table as a good reason to either revise their product designs or change the way that they price term insurance, relative competitive levels will probably shift appropriately. This should leave the term competitive landscape relatively unchanged. One exception might be based on the fact that deficiency reserves can change for a variety of reasons. If there are nontrivial deficiency reserves today under the 1980 CSO, that could have an impact going forward into the 2001 CSO.

At the fall meeting of the Life and Health Actuarial Task Force (LHATF), in New Orleans, which I attended, the 2001 CSO table was adopted without much discussion. I'm guessing there was a lot of discussion at prior meetings. In any case, as soon as LHATF adopted it, they sent their report to the NAIC A Committee, which adopted it as well the same day or one day later.

The only item left then from the NAIC standpoint is that the Executive Plenary Committee needs to adopt it, and that's expected to happen in December 2002. Once the NAIC adopts, then the states obviously have the option to adopt as well. The states can begin adopting in 2003, as long as the NAIC adopts. If that happens, each state has the choice to make it effective either the year that it adopts or January 1 of the following year. For example, if Massachusetts adopts in 2003, the table is effective either January 1, 2003, or January 1, 2004. I believe it's up to the state when to adopt it. That doesn't mean that companies have to start using the table, but it gives them the option to do that.

Only Florida requires a legislative action to adopt the table. All of the other states require a regulation adoption. I made some phone calls and did some work on this, but I got a variety of answers with respect to codification. Maybe when we're all done presenting, if somebody knows more about codification than I do, they could address the audience. It's hard to tell which states have codification and, if they do, what that means as far as how the table is adopted. It could be very streamlined, but at this point I couldn't find out enough about it to tell you.

Something to know about the latest version that's being adopted is that the mandatory date when you have to start using it is January 1, 2009. That was pushed back a year. Originally it was January 1, 2008. The American Academy created an age-last-birthday version of the table and is also creating a gender-blended version. A prior draft of the regulation had different methodologies for gender blending in it, and those have all been taken out. So you'll just be given a gender-blended version.

You do not need to submit mortality data with the new CSO table. That was also in a prior draft and has been taken out. But you must submit asset adequacy analysis if you're using the new table. At one point the regulators were trying to decide if it

made actuarial sense to have two different mortality levels for your two different reserves, base and deficiency. I think they basically threw it to the American Academy, which came back and said, "Let's just do asset adequacy analysis, and that should solve it."

MS. BARBARA R. GOLD: I was thinking back to the very first Society meeting at which I spoke in the spring of 1982, when I co-chaired a workshop on the new mortality table. As you can guess, that new mortality table was the 1980 CSO. That discussion focused primarily on the issues that Nancy and Chris have covered, the impact of the new mortality table on pricing and reserving. There was absolutely no discussion of the tax implications of the new mortality table. The world has changed since then.

Since 1982 more than 15 laws have been enacted that contain tax provisions concerning life insurance companies and their products. In fact, one of the work groups that the Academy set up had to study potential tax issues arising from the new table. Two sets of tax issues arise from the new table. The first set concerns company tax issues. This is the maximum amount of reserves that life insurance companies can deduct in computing their taxable income. The rules for calculating tax reserves are covered under Section 807 of the Internal Revenue Code.

The second set of tax issues are product tax issues, namely, the calculation of the definition of life insurance and the modified endowment contract (MEC) limits. The definition limits are the limits that a life insurance contract must comply with to be considered life insurance under the tax law. The consequences of not qualifying as life insurance under the tax law are draconian. For example, if you have a disqualified contract, the increase in the gain in the contract is taxed annually. The rules for calculating the definitional limits are contained in Section 7702.

A life insurance contract must comply with MEC limits to avoid being considered a MEC under the tax law. If a life insurance contract is considered a MEC under tax law, then, among other things, loans are treated as distributions, which are taxed on a gain-first basis, with a penalty tax in some situations. The rules for calculating MEC limits are contained in both Section 7702 and Section 7702A.

The tax reserves for life insurance contracts are the greater of the federally prescribed reserve and the cash surrender value. That's the cash surrender value after reduction for surrender charges. In calculating the federally prescribed reserve, we must use the prevailing commissioner's standard table, which is defined in Section 807 as the most recent CSO tables prescribed by the NAIC that are permitted to be used in computing reserves for that type of contract under the insurance laws of at least 26 states as of the date the contract is issued.

Section 807 provides very clear transition rules for when a new table is adopted. Companies have three full years after the table becomes prevailing before they have to use it for new issues. During that three-year period, they can use either

table. After that three-year period has expired, the new table must be used. So, for example, if the 26th state would permit use of the 2001 CSO as of January 1, 2005, then companies could use the 2001 CSO or the 1980 CSO for issues during three full years: 2005, 2006 and 2007. Not until we reach issues of 2008 and later would we have to use the 2001 CSO.

If, for some reason, a state decides to make the table effective in the middle of a year, then again, Section 807 provides for a three-complete-year transition. So in this case, if a state made the table effective in the middle of 2005, we could use the 1980 CSO or the 2001 CSO for 2005, 2006, 2007 and 2008, and we would have to use the 2001 CSO to determine tax reserves for issues of 2009 and later.

There actually is an issue as to which of the tables is prevailing. As Nancy mentioned, we have composite and smoker/nonsmoker versions of the table, and we also have a select and ultimate version of the table. Section 807 provides for determination of the prevailing table. It says that if there's more than one table or an option under a table, you have to use the version that generally yields the lowest reserves.

But the Academy report on the new table provides some very helpful language in this regard. It concluded that under the 2001 CSO, reserves based on ultimate mortality were generally less than reserves based on select and ultimate mortality. We think it's reasonable to conclude that tax reserves should be based on ultimate mortality. The report also concluded that the weighted average of smoker and nonsmoker reserves, using the weights that were underlying the 1990 to 1995 mortality, approximated reserves based on composite mortality. So we also think it's reasonable to conclude that tax reserves should be based on the same smoking status that you're using for statutory reserves.

You might wonder why we're placing so much emphasis on the definition of what table is prevailing. After all, it's a company tax issue. If we get it wrong, it affects our taxable income. It probably has some pricing implications, but it's still only a company tax issue. A little bit later, when we discuss the product tax issues, you'll see why it is absolutely necessary to have clarity on this issue.

The next four figures, which I'll just go over briefly, show the impact on tax reserves of the 2001 CSO. They all compare tax reserves based on the 2001 CSO, using ultimate mortality, to the tax reserves using the 1980 CSO mortality. This is for a 20-year term for male, nonsmoker, issue ages 45 and 65 (Figure 13). In these examples tax reserves are down 13–25 percent. As the more extensive chart that Chris put together showed, the variations range over an even wider percentile, and it's possible, in fact, that reserves under the 2001 CSO may be greater than reserves under the 1980 CSO.

Figure 13

Tax Reserve Comparison
20-Year Term - Male
2001 CSO Ultimate Mortality as a % of
1980 CSO Ultimate Mortality

	1	3	5	10	15	20
Age 45	77%	75%	76%	77%	77%	76%
Age 65	74%	84%	85%	85%	87%	84%

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This is similar to what Nancy showed on whole life insurance contracts (see Figure 14). This is for a male, preferred, nonsmoker, issue ages 25 and 55, and in this example reserves are down 8 to 15 percent. Nancy's slide showed 15 to 20 percent, so it's in the same general ballpark. Figure 15 is for a regular universal life contract. There's very little difference in reserves and, in fact, may show a small increase in reserves, but this reflects the cash value floor in computing tax reserves. Figure 16 is for variable universal life, but it doesn't incorporate the cash value comparison. With the cash value comparison, after the first duration, reserves are down about 2–8 percent.

Figure 14

Tax Reserve Comparison
Whole Life - Male Preferred Nonsmoker
2001 CSO Ultimate Mortality as a % of
1980 CSO Ultimate Mortality

	1	3	5	10	15	20
Age 25	N/A	82%	82%	84%	86%	86%
Age 55	N/A	84%	85%	88%	90%	92%

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Figure 15

Tax Reserve Comparison
Universal Life - Male Preferred Nonsmoker
2001 CSO Ultimate Mortality as a % of
1980 CSO Ultimate Mortality
Reflecting Cash Value Floor

	1	3	5	10	15	20
Age 25	100%	96%	96%	104%	101%	101%
Age 55	100%	97%	97%	102%	100%	100%

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Figure 16

Tax Reserve Comparison
Variable Universal Life - Male Preferred Nonsmoker
2001 CSO Ultimate Mortality as a % of
1980 CSO Ultimate Mortality
Not Reflecting Cash Value Floor

	1	3	5	10	15	20
Age 35	64%	95%	96%	96%	95%	92%
Age 65	69%	97%	96%	96%	97%	98%

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Let's turn to the product tax issues arising from the adoption of a new mortality table. As I mentioned before, the product tax issues fall into two categories: the definition of life insurance and the MEC rules. Under the definition of life insurance, there are two tests, and a contract must satisfy one of these tests to receive favorable tax treatment. The cash value accumulation test requires that the cash value under the contract never exceed the net single premium for the contract. The guideline premium cash value corridor test requires that the premiums paid into the contract never exceed the guideline premium limits. The cash value corridor portion of the test is a comparison of the death benefit to the cash value, and that must meet certain ratios provided in the Code. That table is hard-coded into the Code. In addition, the MEC rules cover the treatment of distributions from a contract, and the rules for calculating the seven-pay premiums are contained in both Section 7702 and Section 7702A.

There are at least six product tax issues that I want to cover. I know there are probably even more out there, but I was given a limited amount of time. The first product tax issue concerns reasonable mortality charges. The rules in Section 7702 and 7702A for the calculation of the definition and MEC limits require that these be calculated using reasonable mortality charges. Section 7702 defines reasonable mortality charges as those that meet the requirements of any prescribed in regulations and that, except as provided in regulations, don't exceed the mortality charges specified in the prevailing tables defined in Section 807 as of the time the contract is issued.

Going back to Section 807, prevailing tables are those that are permitted to be used for valuing the contracts by the insurance laws of at least 26 states. So you can see why, for product purposes, it's extremely important that we have a definition of what constitutes a prevailing table.

As we previously discussed, the Academy report provided some very helpful language in this regard, basically saying that the prevailing table should be ultimate, and you have a choice of smoker/nonsmoker or composite. So we think it makes sense that the reasonable mortality charges should be based on ultimate mortality and the smoking status corresponding to the nonforfeiture status of the contract.

But reasonable mortality charges have been around since 1988, and we've received very little guidance from the government on how we should handle this. Notice 88-128 provided the 1980 CSO as a safe harbor, and it attempted to clean up the unisex issue. Because unisex tables are not permitted to be used for valuation by at least 26 states, they can never become prevailing. They're just used for nonforfeiture purposes. So 88-128 said that to the extent that a state requires contracts issued in that state to use unisex tables, you could use unisex rates to determine the Section 7702 and 7702A limits. But we don't issue unisex contracts just because states require it. We also issue them because of federal regulations and requirements and because of marketplace considerations. The industry made several submissions to the government after Notice 88-128 during the late 1980s and early 1990s, and in 1991 proposed regulations were issued. We then had many conversations with the government about that, but the regulations were never finalized.

The second product tax issue arising from the new mortality table is, When do you have to use the 2001 CSO for definition and MEC purposes? It's the transition issue. We could have a serious issue if there's a disconnect between what's required under tax law and what's permitted in a state. If we were required to use the 2001 CSO for tax purposes before we were permitted to use it in a particular state, there might be a conflict between federal and state law that could result in contracts not qualifying as life insurance. The easiest case to consider is a paid-up contract that has as its nonforfeiture basis the 1980 CSO at 4 percent. The state minimum cash value is the 1980 CSO at 4 percent. If the IRS said, "You have to use the 2001 CSO" or any other table that they please, the federal maximum would be the IRS table at 4 percent. We could be in a situation in which the state minimum mortality is actually higher than the federal maximum mortality.

For universal life contracts, the situation is not quite as severe. For cash value accumulation universal life, the minimum death benefit usually is based on a ratio of the cash surrender value to net single premiums. These net single premiums would have to be revised. If guideline premium universal life contracts were not revised to provide that the maximum mortality charges would be based on the 2001 CSO, the contracts might not mature based on their guarantees. There are

also some guideline premium cash value corridor universal life contracts that provide reduced paid-up insurance based on the cash value accumulation test. These contracts would be in the same situation as a traditional contract—there would be a conflict between state and federal law that could result in the contracts not qualifying as life insurance under the tax law. As a practical matter, in all cases systems would need to be revised and contracts refiled, and we can't underestimate the amount of pressure that that will place on the state insurance departments.

The ACLI is working on a submission to Treasury that will request that the transition issue be resolved by permitting new issues through the end of 2008 to use either the 1980 CSO or the 2001 CSO to determine the definition and MEC limits. Which table is used would depend on which table is used in the contract's underlying computations, but after January 1, 2009, the 2001 CSO would be required for all new issues. That 2009 date is tied to what's in the 2001 CSO Model regulation. The ACLI will also propose that the unisex language be clarified to provide that if a state permits, rather than requires, the use of unisex tables, then these unisex tables can be used to determine the definition and MEC limits for that contract.

The third product tax issue is the grandfather issue. If I have a 1980 CSO 4 percent contract, which can be issued up until the day before the 2001 CSO is required, what transactions can I do to that contract that would not cause it to lose its grandfathering under the definition and MEC rules? If a contract loses its grandfathering, then it's subject to the new rules. The ACLI will be proposing that such 1980 CSO contracts that undergo any material changes or adjustment events should be able to continue using the 1980 CSO table. The only exception would be cases in which we have an actual exchange of one contract for another. For example, the ACLI will propose that the addition or removal of a rider would not be considered an exchange and would not result in the 1980 CSO contract losing its grandfathering.

The fourth product tax issue is the maturity age issue. The mortality rate is one under the 1980 CSO at age 99 and under the 2001 CSO at 120. So you'll hear people talk about age 100 and age 121. But the computational rules in Section 7702 deem a maturity age between 95 and 100, and that's hard-coded into the law. It doesn't use a phrase such as "the end of the mortality table currently being used."

What is the impact on our premium rates, assuming endowment at age 100 or age 121? Actually, guideline single premium, net single premium, seven-pay and guideline level premium contracts for Option 1 death benefit contracts are all lower on the 2001 table than they are under the 1980 CSO, whether we assume an endowment at 95 or 120. However, there is a significant increase in the Option 2 death benefit guideline level premium when we assume an endowment at 120. But changing the maturity age in Section 7702 would require a legislative change, and the ACLI Mortality Tables Working Group will meet shortly to determine how best to

approach this issue. However, even if a decision is made not to seek a legislative change, there are a lot of questions about how to implement a maturity age table past 100. Can we include benefits beyond age 100 in the calculation of the limits? If the guideline level premiums do assume a maturity between age 95 and 100, what do we do about the cumulative guideline level premium limit past that age? Also, in some of our calculations, we noticed that if you calculated a guideline level premium going out to age 100, and you calculated a guideline level premium going out to age 121—even though the age 121 guideline level premium was less than the age 100 guideline level premium—you actually could put more money into the contract if you accumulated it to age 121 than you could by stopping at age 100. How should we do this calculation?

As I mentioned, the cash value corridor test portion of the guideline premium test is hard-coded into the law, and it says that for ages 95 and above, the ratio of the death benefit to the cash value is 1. Should we continue to use one as we develop products that go out to 121? Should we seek a change in the law or wait for the government to do it? In addition, it's unclear how to apply the cash value accumulation test beyond age 100. The same issue exists under the cash value corridor. Do we assume a net single premium of one, or do we use the net single premium that's automatically developed from the appropriate 2001 table?

The fifth product tax issue is, What constitutes the definition of a new issue for group contracts? Is it the issuance of a new contract to the group policyholder or the issuance of a new certificate under the group contract, whether it's to an existing insured or to a new insured? We think that there's an answer to this question in the blue book on the definition of life insurance. It states that the date of issue is the first date that an insured is covered under the group contract.

The sixth product tax issue arising from the new mortality table is, How do you calculate limits when the guaranteed mortality charges in the contract are greater than or less than the 2001 CSO? How should limits be calculated for substandard contracts in which the guaranteed mortality charges are greater than the 2001 CSO? What safe harbors can be provided, and what would be the criteria for the use of these safe harbors? Since 1988 the industry has made several submissions to the government on the issue of substandard and has had conversations with the government about substandard. They're well aware of current industry practices and that this is a very serious concern for the industry. The ACLI intends to pursue these conversations. Notice 88-128 actually gave the 1980 CSO as a safe harbor, even if the mortality charges guaranteed in the contract were less than the 1980 CSO. The government has expressed concerns about this, and in its proposal the ACLI will recommend that the safe harbor be the guaranteed charges in the contract if such charges are less than the 2001 CSO.

As you can see, the adoption of a new mortality table poses an interesting array of tax concerns and issues that are of tremendous importance to the industry. The resolution of these issues and concerns began when the tables were first being

developed, but some won't be concluded for a couple of years after the development of the table.

MR. GLENN A. TOBLEMAN: This is a question mostly for Barbara. As long as the ACLI will be talking to the Treasury Department about issues with respect to the cost of insurance rates and maturity ages, are they going to also talk to them about the interest rates?

MS. GOLD: There's a general concern about talking to the IRS about interest rates. If everybody remembers, when the definition of life insurance was adopted in 1984, 4 percent seemed like an extremely low rate, given the interest rate environment at that point in time. There is a concern that if we go to the IRS and talk to them about legislative changes to the interest rate, we could end up with an indexed rate. It's highly unlikely we'll end up with a lower rate now because rates are low, and they remember what happened in 1984. But that's always a possibility when you go in to talk to the government, that they will raise an issue such as changing the interest rate to a sliding schedule, which is why the industry's not rushing in to talk to them about legislative changes. We want to carefully consider what all of our options are.

MR. ARMAND M. DE PALO: I just want to make an observation. When the 1980 CSO was adopted, it was a much slower process than what you see now because there wasn't as much pressure on the industry. The term writers are going to see this new table as a major reduction in reserves. One of the reasons it's going to be a reduction is something a lot of people haven't thought about. When we originally wrote XXX, there was Appendix 1. The regulators were conservative and wanted it to grade in to eliminate the discontinuity at basically age 70, where it's grading into the 1980 CSO 10-year select table. That means at higher ages there's a large effect on the X-factor. That's because you couldn't increase your X-factor, but you had to apply it to a much higher table. The new 2001 CSO has its own 25-year select table, so there will not be an Appendix 1. You will apply the X-factors directly to it.

Therefore, this discontinuity at the higher ages will go away, which means at the higher ages the reserve relief of this table is enormous. I'm bringing this all up because people are talking about when we will get 26 states. We may be very shocked at the pressure on states of domicile, especially where large reinsurers and insurance companies are writing a lot of term. They may put enough pressure on their states that in 2003 we may have 26 states adopting. That may speed up this whole process. The three years we all have to work with may be one year shorter than a lot of people are assuming. There's a lot of work to do in repricing all of your products. The term companies, I think, will drive this issue. The cash value companies are not advocating moving rapidly because it doesn't do much for them, one way or the other. But to the term companies, it's a big issue. I just wanted to make that observation for what it's worth.

MR. DOUGLAS C. DOLL: First of all, I have a comment on what Armand just said about the 1980 CSO being slow to be adopted. Another factor was that it was required legislatively, for the 1980 CSO, in all states, whereas one of the speakers mentioned that Florida is the only state now that requires legislation to get it adopted. I have a question on the term presentation. Obviously part of the impact on the premiums that you showed depend on what the assumption was for the cost of the letter of credit to the reinsurer. Could you let us know what that assumption was?

MR. NOYES: The assumption on the letter of credit varied by the length of the term product. I believe on the 10-year term product it was 110 basis points, and it went up to as high as 130 on the 30-year term product.