
2000 Valuation Actuary Symposium
Washington, D.C.
September 14–15, 2000

Session 16PD
NAIC Valuation of Life Insurance Policies Model Regulation (XXX)

Moderator: Timothy C. Pfeifer
Panelists: Mary J. Bahna-Nolan
Lloyd M. Spencer, Jr.

Summary: The National Association of Insurance Commissioners (NAIC) Valuation of Life Insurance Policies Model Regulation (XXX) sets out the valuation requirements for life insurance with nonlevel premiums or nonlevel benefits, including term insurance and universal life with certain underlying guarantees.

Panelists discuss the issues they have and face as they continue to implement the requirements. The issues discussed include:

- *Determination of X factors when no credible company mortality exists*
- *Proper treatment of secondary guarantees in universal life insurance*
- *Preparation of the mortality assumption opinion requirements*
- *Impacts on product development and design*

MR. TIMOTHY C. PFEIFER: I'm a consulting actuary with Milliman & Robertson in Chicago, and I'll be moderating the session.

We are going to address the topic of XXX from several different perspectives. We will give some updates and recent developments. We'll also discuss the impact that XXX has had on products

and product design. Lloyd Spencer will begin by covering a range of topics, including some reinsurance issues, issues on X factors, and some valuation actuary topics. Mary Bahna-Nolan will go second and will describe some of the recent impacts of XXX on product designs and will introduce some of the innovative product efforts that are being done in reaction to XXX.

I'm going to finish up with a few brief remarks on universal life with secondary guarantees and an update on the 2000 CSO table, which is also of interest here.

Let me start by just introducing both of the speakers, and then we'll start with Lloyd. Lloyd Spencer is an assistant vice president and director of life product development with Lincoln Re. He is responsible for managing Lincoln's individual life pricing assumptions and their systems, including the Lincoln Mortality System. Lloyd has been very active in a lot of the recent discussions on XXX and strategies and methods for companies to work its way through the regulation.

Mary Bahna-Nolan is a vice-president of product development for North American Company for Life and Health in Chicago. Mary has been very active over the last ten years or so in the area of life product development. With heavy emphasis on term insurance and universal life, Mary has been very active in thinking through some of the issues with XXX and in trying to develop products that meet the regulation and that are also competitive.

MR. LLOYD M. SPENCER, JR.: When our clients talk to us about XXX, a sentiment sometimes comes across. I'll quote from Abraham Lincoln, "If this is coffee, I would like tea. If this is tea, I would like coffee." It's not exactly clear what the industry was expecting from the XXX regulation, but now we have it, and we can't ask for anything else. We're now destined to work within the framework that has been laid out before us. Because I am from Lincoln Re, I had to work in an Abraham Lincoln quote along the way.

I'll be covering three primary areas of interest related to the valuation actuary. I'll also discuss topics on X factors and some general reinsurance topics. I'll start with the valuation actuary issues. First, let's get a quick update on the status of XXX. When I checked, I found that 34

states had adopted XXX in its basic form. There have been a couple of state variations, including Illinois and Indiana, where states have adopted a slightly different version of XXX aimed at products with shadow account values. California, Texas, New Jersey, and Illinois are numbered among those states that have passed XXX with varying effective dates. New York Regulation 147 was adopted on an emergency basis a couple of times during 2000 and is now going through the formal exposure process with a comment period that closes out at the end of September 2000. New York is moving towards an adoption of XXX, largely in its basic form.

I also wanted to update you as well on the draft version of an Actuarial Standard of Practice. The Actuarial Standards Board met at the end of June and voted to expose a revised second edition of the Actuarial Standard of Practice, with the first revision coming out last fall. The second revision is open for comments through October 15, and I know that the Life Committee, and particularly the XXX Committee on the Actuarial Standards Board side of the house, would appreciate comments from the industry. They did receive a number of comments the first time around and felt that the changes they incorporated were significant enough to expose the Standard of Practice a second time. I would encourage you to take advantage of that opportunity to comment.

In terms of the XXX Life Practice Note, I'll put a plug in for the Life Practice Notes. I serve on the Academy's Committee for Life Insurance Financial Reporting. One of my areas of responsibility is the general set of Life Practice Notes. You can go to the following Web address, <http://www.actuary.org/practice.htm>, for the complete list of Casualty, Health, and Life Practice Notes. The XXX Life Practice Note is in a draft stage. We did release a draft copy of the Practice Note at the San Diego XXX Seminar, and we hope to include that as a copy on the CD of handouts that you'll receive from the Society. I think we will try to get that in a draft form on the Academy Website as soon as possible. We are certainly looking to finalize the XXX Practice Notice before the end of 2000, and that's aimed more at practical discussions of issues of interest to the valuation actuary and what general industry practice is related to those issues.

My last topic in this area would be related to $\frac{1}{2}$ - c_x reserves, and the notion of minimum versus sufficient reserves. We are faced with some different product designs in the current marketplace. We see the fully guaranteed level premium term product design, which is no stranger to us. It

has been in the market for many years, and it was the primary focus of XXX in its two incarnations. Segmented reserves are certainly held over the level premium period, and many product designs sold here in the United States would be followed by an attained-age-based, yearly renewable term (YRT) premium scale and a corresponding scale of $\frac{1}{2}c_x$ reserves based on the 1980 CSO. I've included a quote here from the regulation: "Traditional reserves for attained-age-based YRT policies are already adequate and sufficient." There is no reason to hold an additional reserve in the YRT period beyond $\frac{1}{2}c_x$ reserve.

The question that has unfolded during calendar year 2000 is one of short guarantee level premium product designs, of which two common designs might be a 20-year term plan with a 10-year level premium guarantee, or a 30-year plan with a 10-year guarantee. Segmented reserves over this initial level premium period would follow a humpback pattern for a much shorter duration than under the fully guaranteed 20-year or 30-year plan, followed by nonguaranteed level premiums and the $\frac{1}{2}c_x$ reserves that we've talked about earlier. I guess the question for the floor is: $\frac{1}{2}$ of c_x reserves are the minimum reserves, but are they sufficient? We know that they meet the minimum valuation standard for nonguaranteed plans, but are they adequate and sufficient?

I'd like to consider the order of magnitude of that question first. I have constructed a couple of scenarios here. There is a 20/20 fully guaranteed level premium plan charging \$2.20 per thousand over the 20-year level premium period. There is another plan, a 20/10 design, with a corresponding lower premium that is guaranteed over the initial 10-year period, but that could remain level over the full 20-year time frame.

An actuarial presentation must have a graph of some sort (see Chart 1). The diamond line, the steep humpback reserve for the full 20/20 plan, is, as you would traditionally expect, a humpback reserve over 20 years. The relatively flat circle line down at the bottom of the chart is the $\frac{1}{2}c_x$ reserve, assuming you were able to hold $\frac{1}{2}c_x$ over the entire 20-year period, as was the case prior to January 1, 2000. The square line shows the humpback reserve for the 20/10 plan over the first ten durations in which the premium is guaranteed to be level, followed by reserves equal to $\frac{1}{2}c_x$ during those out years, 11 to 20. For illustrative purposes, I've included a net GAAP liability

(triangle line), which would be the GAAP benefit reserve less deferred acquisition cost asset over that 20-year time frame. At a minimum, the net GAAP liability reserve should be thought of as your sufficient reserve in this situation.

The practice of holding $\frac{1}{2}$ - c_x reserves during those out years, might not expose a particular plan to possible problems, or even necessarily expose the company to problems. However, if a company's portfolio consisted entirely of these plans, it would be a difficult proposition to rationalize why your GAAP reserve is higher than your statutory reserve during those out years. I think this practice was implicit in a lot of what was going on in the reinsurance marketplace over the past several years, with companies successively pushing guarantees out further and further. It was one thing to hold $\frac{1}{2}$ - c_x reserves over a ten-year guaranteed period. That grew to 15, 20, 25, and 30 years, and I think reinsurers are beginning to see the light in terms of what is a sufficient reserve. In this area, I would challenge valuation actuaries at each of the direct companies to give this consideration as well. Be cognizant of what is built into your product actuary's pricing model.

I would like to transition here to X factors, touching on two areas. First is prospective X factors. We've all pretty much been through that process. Second is what is coming up this year-end which is a retrospective look-back at your X factors. With prospective X factors, a couple of issues bubble to the surface. In the situation where the company has no credible mortality experience, the Draft Actuarial Standard of Practice suggests that you first look to the company's own experience for similar plans. If nothing is available, then you might be looking at some kind of an industry study and/or using reinsurers' data to help you determine what those X factors should be up front. That's one issue that you've likely addressed over the past nine to twelve months.

A second issue is related to the determination of X factor classes. Again, the Draft Actuarial Standard of Practice suggests that policies with similar underwriting experience or characteristics would be natural candidates for grouping into a particular X factor class. The draft does not give any firm guidance beyond that, but, again, the suggestion of grouping similar policies together makes sense. In theory you could have an X factor class at a pricing cell level, at the company

level, and at anything in between. Also, the admonition is to consider the presence of reinsurance when setting these X factor classes.

One comment that came out from the second exposure of the Draft Actuarial Standard of Practice is a careful consideration of reinsurance when it might materially change the expected X factors that would result from the presence or absence of reinsurance.

For example, Company A might have very poor direct mortality/direct experience and seek out a partner company, Company B, that has excellent mortality experience. It might assume business from Company B and use that business to subsidize its blended X factor experience on a gross (direct plus assumed basis), and then cede the business back to Company B or one of Company B's affiliates, thereby not retaining any of the risk within its entity but being able to take advantage of the more favorable blended mortality experience when it performs its X factor tests each year. It is not likely that companies would do that, but that was one potential concern that was addressed by the revised Standard of Practice.

The appointed actuary should be satisfied that mortality studies for each X factor class are or will be available. This is one area where the valuation actuary needs to take the lead at direct companies in terms of identifying what kind of data resources are going to be needed. You will have the information available by X factor class to satisfy the testing requirements.

Another question that has come up from our reinsurance clients has been one of margin in X factors. The Standard of Practice suggests that the actuary should consider providing a margin. One way to do that would be by selecting higher X factors. There are certainly other ways to provide for a margin. There might be no need to provide a margin at all in the appointed actuary's mind, but I think that's an issue that's open for discussion and likely will be addressed in the Life Practice Note, if no place else.

Let's consider retrospective X factors. The appointed actuary is annually expected to evaluate X factors in light of relevant, emerging mortality experience. It begs the question of mortality studies. What information will I need to capture now? And I need to be considering that before

December 31, 2000 rolls around. Is this a particular area that I could outsource to a consultant or to a reinsurer?

Another issue here is the accept/reject analysis that would be required of the appointed actuary in determining whether the set of X factor classes that have been used are sustainable by the actual mortality experience that has emerged. I've identified a couple of methods here to determine the aggregate distribution of aggregate claims. One is the Panjer Method highlighted in the 1980 *Transactions* article, and the second is the traditional Monte Carlo testing. Both of these methods are going to provide you with a very similar distribution of aggregate claims, assuming that you have the input set correctly. If I ran a Monte Carlo analysis or a Panjer analysis, assuming that I had one class of policies with one expected mortality rate, and all my policies lumped in there, there's really no room for second guessing about what that distribution would be. Is this the level at which you should be making an evaluation?

You might expect wide variation in your mortality experience by underwriting class, by gender, by tobacco use, or any number of other identifiable criteria. Maybe one of the major reasons would be the differences in underwriting as you move up the issue amount bands. You would expect a different mortality rate on policies that were underwritten at the \$10 million band than you might expect for policies that were underwritten at the \$10,000 band.

For these reasons, it's more about constructing the inputs to these methods and making sure that you have enough stratification of the data across the expected mortality X factor classes. That will confirm that you have the correct distribution of claims. The issue might be one of doing it by number versus by amount. The Actuarial Standard of Practice that has been proposed is clear that you consider "by amount" distributions. "By number" distributions will turn out to be tighter than "by amount" distributions. That admonition actually might work in reverse, which is not a bad thing.

The X factor opinions supporting the Actuarial Report is another one of the items added to the appointed actuary's to-do list around the year-end process. Again, be thinking about these issues before you hit December 31. There are not enough hours in the day to get everything done.

Reinsurance issues. I'd like to touch briefly on offshore reinsurance, X factors in light of reinsurance issues, and New York Regulation 147. The term *offshore reinsurance* is used by many reinsurers here in North America. The reinsurer would assume a proportionate share of the full XXX reserve from a direct writing company. It must be both base and deficiency reserves, and the reinsurer would do that in a U.S.-based company. The direct writer might directly cede offshore, if that is its desire, but typically its interest would be in having the reinsurer be the last company to touch those reserves before it left a U.S. company.

The U.S.-based reinsurer would then cede 100% of this business to an offshore reinsurer. The offshore reinsurer would typically back a prudent reserve with assets and would secure the excess of full XXX reserves, base plus deficiency reserves, with a letter of credit. This raises a question on letters of credit. That seems like a pretty integral assumption that's built into the reinsurance pricing process. Letters of credit, for those who aren't familiar with the nature of the beast, are secured from banks on an annual basis, typically by an offshore reinsurer for the benefit of the U.S.-based reinsurer. There might be some structures that allow letters of credit to be extended for more than one year, but there is a definite price to be paid for that option.

Future availability and price are uncertain, and the question that naturally arises out of this is who effectively bears this risk? Is this risk being passed back to the direct writer in the form of some kind of nonguaranteed allowance? Is the explicit cost of a letter of credit being passed back to you in the form of a direct charge in the treaty, or is there no mention at all of letters of credit in your treaty? I think all of those situations are possible, and I would challenge you to examine your reinsurance treaties. I'm sure that all direct writers have all their reinsurance treaties finalized for 2000 issues! Have all been drafted, approved internally, and signed by the reinsurers? Not likely.

Let's discuss X factors and reinsurance. X factors might vary between a ceding company and reinsurers of the same blocks of business. Donna Claire mentioned this point at another session, and it is highlighted in the Life Practice Note as well. Having that flexibility is great. X factors themselves complicate the year-end reporting process for self-administered business. Your reinsurer will be interested in what kind of X factors you're using and what kind of deficiency

reserves result from those X factors. You might be interested in having your reinsurer hold those X factors and deficiency reserves. That also begs the question: what if the ceding company's X factors change? Have you thought about the process that you'd go through with your reinsurer if you ran into difficulties on your block of business and were forced to raise X factors on some of your classes of business? Have you talked about that with your reinsurer?

Finally, I'd like to touch on New York Regulation 147. It seems like a little bit of an awkward place to talk about Regulation 147, but there is a caveat in the version that's exposed currently and is open for exposure through the end of September. I'll quote from the regulation here. New York has inserted a new section in the regulation, which is the New York Valuation Law, Section 98.4, Subsection Q. "In any reinsurance agreement, providing that if reinsurance premiums are increased, there will be a corresponding increase in the expense allowance, the reinsurer shall treat the guaranteed reinsurance premium scale net of the guaranteed expense allowance as the guaranteed premium scale to be used for reserve calculations."

This might not seem like a big deal to a direct writer, but to a reinsurer, this provision has serious implications. One point that immediately comes to mind in this is a deviation from the Standard Valuation Law treatment of expense allowances. Nowhere else in the valuation law is one required to net gross premium against the reinsurance allowance. We would be paying a direct writer and use that as our effective net reinsurance premium. I think the New York State Insurance Department wants to identify those reinsurers and direct writers that, in the past, have used somewhat fuzzy language both on a YRT basis and on a coinsurance basis to effectively guarantee a nonguaranteed reinsurance premium structure. I would invite you to examine your reinsurance treaties on this point as well to see if you or your reinsurer have drafted language along these terms. If you have, and if you're operating in the state of New York, you have an exposure.

MS. MARY BAHNA-NOLAN: Lloyd alluded to or discussed the state activity with respect to adoption of XXX. I think Lloyd mentioned that his most recent statistics showed that 34 states had adopted XXX. It's the other 16 states that haven't adopted XXX that are really causing the product actuaries a lot of problems and are putting a lot of pressure on us. It's really creating an

uneven playing field for the carriers that are trying to comply within the regulations of XXX. There are many companies that are domiciled in states that have not adopted XXX or that are ignoring the XXX reserves. There are a couple of states, South Dakota and Tennessee in particular, that have indicated that they have no intention ever to adopt XXX. This places a lot of pressure on the product actuaries because we're trying to develop products that compete on an XXX basis against products that are priced without XXX or ignoring the impact of XXX. This is especially true on universal life with long-term guarantees, as well as term insurance with the long-term guarantees.

That said, I'd like to take a look at what type of impact XXX has had on product design since it became effective at the start of 2000. I'll start with term products because term products were most impacted by XXX and also were the products that companies first focused on. Most companies entered the marketplace at the beginning of this year with both full and partial guarantees. Today, 10-year, 15-year, 20-year, and even 30-year level premium guarantees are available in the marketplace. In 1999, I stood before many of you and predicted boldly that 30-year guarantees would probably go away. That certainly did not happen. We have 30-year plans out there priced under an XXX environment, but there are much fewer of them out there today than there were in 1999. The last time I checked, there were only about 14 or 15 companies that offer the full 30-year level premium guarantee or level death benefit plan. This is different from the numerous companies that, towards the end of 1999, had the 30-year plans.

For those offering the partial guarantees, the most common partial guarantees are 10 and 15 years. Companies did enter the marketplace at the start of the year with shorter guarantees. There were some other odd-year guarantees, but a lot of the companies that had the shorter guarantees, for three or five years, have since pulled those products from the marketplace or have extended those guarantees out to the 10- or 15-year level. For the level premium term plans, for the 10-year, 15-year, and 20-year level, the most common guarantee is the full level premium period of 10, 15, and 20 years. As we get to the longer level premium products at 20 and 30 years, that's really where we start to see the partial guarantees come into play.

On the 30-year plan, I think that's the one aberration to the full level premium guarantee. The partial guarantee is the most common product out there, and I think there are a couple of reasons for that. One is the surplus strain; the price on a 30-year full guarantee is pretty significant. Towards the end of last year and even at the beginning of this year, reinsurers really were very reluctant to price the 30-year products or take the 30-year products offshore and use up their capacity. I think we're starting to see that change, and reinsurers are now a little bit more willing to reinsure that 30-year plan offshore. I think we'll start to see more 30-year plans enter the marketplace, although the surplus strain is still pretty large on the retained portion of the business that a company keeps. I don't think we'll see the same number of companies in the 30-year market that we did at the end of last year, but I do expect it to increase from 14.

As we expected, we have seen some fairly unique product designs on the term side to try to negate or offset some of the effects of XXX. I think most of these have been on a 30-year level premium design. We're starting to see some of them come into play on a 20-year level premium design, but most of them were put in place to really give the effect of the guarantee on a nonguaranteed plan. I hope to explain some of that as I go through some of these designs.

One of the designs is the refund of premium, and there are really two types of refund of premium products out there. One is a product that is priced with a full guarantee. The premiums are guaranteed for the full 30 years, but it develops cash value throughout the life of the policy. At the end of the level premium period, the cash surrender values are equal to 100% of the premiums paid into the contract. This is priced with the full effects of XXX, but it does give a refund of all the premium, if a policyholder stays for the full 30 years.

The second refund of premium design is really on a nonguaranteed plan, and that basically states that the premium is expected to stay level. If the premium is ever increased from its level amount, the company will refund the last x years of premium, and x is usually somewhere around three.

The next design, the premium increase, is something that has received quite a bit of press lately in places like the *National Underwriter*. A premium increase is tied to an external trigger or

event. In this type of design, the product is not guaranteed, and the premium is expected to stay level, but the company can only raise premiums if the certain event occurs. The regulators have had some bit of discussion on this design. They're okay with this type of design as long as the trigger of the event is something that could actually happen or the trigger has some sort of relation to the pricing or the profitability of the product.

One of the products or the one product that has received the most press or focus is a term product, where the trigger is the Treasury Bill or T-Bill rate dropping below 3%. T-bill rates going below 3% is a very unlikely scenario. It could happen. It's very unlikely that it'll happen. In pricing term products, while asset yields and investment income are a much bigger part of the profitability today under XXX because of the high reserves, it really doesn't have the biggest impact on the pricing of the product. For term products, it's really mortality and expenses. Investment income really does not come into play greatly in the pricing. The relationship between the trigger and the event are kind of questionable. Regulators are questioning this type of design, but it is out there.

There is the affiliated company guarantee. This one has also received some press lately. I know of one company that has at least filed this product. It has been approved in some states. I am not sure whether this product is actually being marketed or not. There is a company that has both a life operation and then a property and casualty (P&C) affiliate. The life company offers a 20-year level premium product with a guarantee of one year. The P&C affiliate offers an endorsement to the policyholder that extends the guarantee for the rest of the period or for the full 20 years. Because the P&C operation is not subject to XXX, in effect, the life operation is offering a full 20-year level premium guarantee. There is no additional cost for this endorsement, and the product is not priced with 20-year level premium reserves.

The decreasing death benefit is a design that is out there. It is a fully guaranteed product in that the level premiums are guaranteed for the full 30 years, but because of the nature of the death benefit, which has a decreasing pattern, it allows the product to offer 30-year level premiums at very competitive pre-XXX type rates. This product is really designed for the mortgage market or something like that. It certainly is a niche product, and I don't see it replacing the full 30-year

level death benefit or level premium guarantees any time soon; however, it is a product that's out there.

Annual renewable term (ART) with long guarantees are certainly not new, but we are starting to see at least one company try to get some push from a comeback of ART products. This is actually on a 20-year design. It has ART premiums that are increasing each year, but the ART premiums are guaranteed for the full 20-year period. The sum of the ART premiums over that full 20-year period, in many cases, is less than the sum of the full 20-year level premium rates that the policyholder would pay if he or she had the level premium design.

Let's discuss the impact XXX has had on premium levels for the 10-year guarantees. It has been a fairly modest impact, and rates have gone from a 10% decrease to a 60% increase, which is a pretty big range. The average adjustment for the 10-year rates has decreased from 5% to no increase. That has been sort of the average for the 10-year rates. The 15-year range of the impact has been anywhere from a 4% decrease to a 30% increase, and the average is an increase of anywhere between 8% and 15%. For 20-year full guarantees, rates have remained unchanged, up to an increase of about 40%, with an average increase of about 15–25%. The 30-year plan rates have increased anywhere from 20% to 75%, with the average somewhere around 40% and 60%.

I think the 30-year rates will probably start to come down a little bit as reinsurers become a little bit more aggressive in the 30-year marketplace; however, I don't expect them to come down a lot. These rates are already the result of several iterations that have taken place in the marketplace since the beginning of the year, and the increases, especially on the 20-year and 30-year products have come down significantly from where we started at the beginning of the year.

I do think that when companies were coming out of the gate, many tried to minimize or eliminate deficiency reserves on those longer guarantees. As I mentioned before, competing against companies that are in a pre-XXX environment, so to speak, puts a lot of pressure on actuaries. From a pricing perspective, I know our company and several others are accepting a lot higher deficiency reserves on the books for a lot longer period than we initially ever desired. It is a big concern because you only have so much surplus to burn. The competitive environment is such

that, in the term marketplace, if your rates aren't there, they're not going to sell. The uneven playing field really does cause a lot of concern.

You saw that the range was pretty great in the increases that I showed you. Those higher adjustments really are mostly focused on the older ages. There is a pretty significant difference between the increases for the younger insureds and the older insureds. Much of that is due to the sloping of the X factors, and if you look at the select factors at the older issue ages, you'll see that the slope of them increases drastically. That can play havoc on the X factors as you go through the various tests to determine your X factors. I would argue that I think a lot of companies are doing some subsidization of their X factors because I don't think the increases at the older ages are as high as they probably would be otherwise. By subsidizing the X factor, I think a lot of companies have set their factor using one or two age bands or using the same X factor for all issue ages within a particular risk class.

That works great, and what that does is it keeps the reserves at the higher ages a little bit lower. It increases them at the younger ages. From a dollar standpoint, the deficiency reserves at the younger ages are a lot lower. From a management perspective of the deficiency reserves, the amount of money you're saving is a good thing, but it does put a company at distribution risk for issue ages. If a company becomes more competitive at the higher ages because it is priced a little bit more aggressively, it will have a significant shift in its age mix or distribution. The company might be mismatched, and that could have a pretty significant impact on the X factor. Something to watch out for is the amount of subsidization going on.

With respect to other product issues or the impact on other product features, I think compensation has stayed the same or decreased. We are now seeing some pressure in that companies have lowered rates as much as they feel comfortable doing, and they're trying to compete through other types of commission increases or temporary application bonuses or something like that. I do think that commissions will come back up over time, but for now, they're at either the same or lower levels than they were before.

Last year, in a pre-XXX environment, a lot of companies actually waived the policy fee for a second policy on the same life or for a second insured business associate or in a husband/wife situation. Several companies did eliminate this feature because the policy fee is needed for deficiency reserves. I was a little surprised at the number of companies that continue to offer this feature because they no longer get the policy fee to help offset those deficiency reserves. That is something to look out for.

Conversion is one area that companies sort of took a whack at. As a way to try to reduce the premium or the impact of XXX, it has been very common for companies to reduce the conversion feature from the full level premium period or from attained age 70 to only five or ten years. I think that this is one area that we will start to see creep back up to at least the level premium period, if not to older ages, over time, as competitive pressures set in.

With respect to the competition, the traditional competitors in the term marketplace are still leading the industry, but we do have a few new competitors. John Hancock is certainly one of them. A representative from John Hancock was quoted in a recent *Kiplinger's Report* article that they are not priced for XXX and that they don't need to price for XXX until their state adopts XXX; they have enough reserves in aggregate. If you check any of the quoting systems, and pull up long guarantees, the first five companies you see are usually John Hancock products. It does create a little bit of havoc for the rest of us. United of Omaha, State Farm, and AIG are companies that have been in the marketplace a long time, but they are not companies that you would traditionally associate with competitive term products. Today they are. Ohio National is another company that has come out and is really competing in the term marketplace on both the nonguaranteed or partially guaranteed and fully guaranteed basis.

With respect to the risk classes, we have seen a reduction in the number of classes, although I don't know that it was as significant as we probably initially expected it to be. It's common for companies now to have five or six classes, whereas before we were seeing more and more companies with eight classes. I think those have come down a little bit. Much of it is attributable to the X factor and the impact that this had on our ability to further delineate the classes. We have seen some tightening in the qualification criteria for the best risk class. I don't

think this, in general, is a big problem but we are seeing some best risk classes with qualifications that are so tight that only about 8% of the population applying for insurance would apply. Those are pretty tight, and when X factors are set on your anticipated mortality, and you're anticipating only 8% qualifying, you have to keep in mind what type of pressures are going to be put on the underwriting department and what type of exceptions they're going to be making to try to fit people into those classes. Something to take into consideration in studying the X factor is what type of business decisions are being made on the underwriting side. As that best class is defined tighter and tighter, this becomes more of a concern.

What we've seen sell so far in 2000 are really the guaranteed products. I know for our company, and I've talked to a couple others pretty informally, about 80–90% of the sales have been in the fully guaranteed products. The longer term products are still selling. There is a demand for the 20-year and 30-year product, despite the increase in premium. Some of our producers have said, rates have just gone back to where they were four or five years ago. They sold a lot of insurance then, and they'll sell it now. We are starting to see the post-XXX sales decline. We had a huge surge of business come through the doors the first quarter, and it even flowed through to the second quarter. It was really pre-XXX business. I think some of the Life Insurance Marketing and Research Association (LIMRA) statistics that will be coming out shortly will show the same thing. Much of this is due to the fact that producers sold a lot in the first part of the year, and they're pretty happy. They've made more money in 2000 than they ever did. But a lot of it is also attributable to replacement activity. LIMRA estimated that about 30–35% of the term sales in the pre-XXX environment were really replacement sales. Replacements get a little bit harder in a post-XXX environment, especially if you're replacing a pre-XXX product with a post-XXX product because the rates go up. Replacements won't go away by any means, but they certainly should slow down, and this will have a dramatic impact on the term sales.

I'm not going to go into too much detail about this, but I can't talk about term insurance and the impact XXX has had without at least mentioning reinsurance and the fact that most of the term products today are reinsured on a first-dollar quota share basis. Co-insurance and quote share percentages are usually 80–90%. As Lloyd mentioned, there are a lot of different ways that the reinsurance treaties can be structured, and I urge you to look very carefully at your treaties

because not all treaties, even for the same plan, are the same. They vary by reinsurer depending on whether the allowances are really guaranteed. They might be guaranteed as long as the reinsurer can get LOC costs up to a certain amount. There are a lot of hidden things in those reinsurance treaties that you really need to be careful of.

I'd like to talk about the impact XXX has had on some of the other products out in the marketplace.

Whole life actually becomes more competitive as a result of XXX because the ability to use the X factors lowers the deficiency reserves for a whole life plan. Since XXX reduces the reserves, we actually need all states to adopt it before it can be sold nationwide. Whole life might replace (universal life) UL with long secondary guarantees at some point because whole life can be priced as competitively as UL with a lifetime guarantee if the UL is priced rationally. The whole life is a much simpler product, but a policyholder does lose some flexibility there.

Variable life is currently exempt from the regulation. New York, as Lloyd mentioned, has included it in their version. The NAIC Life and Health Actuarial Task Force (LHATF) is working on trying to close this loophole. I was at the last LHATF meeting, though, and it was not even discussed. I'm not quite sure where that is within the NAIC, but to date, we haven't seen any companies try to use this loophole.

I'm going to touch on universal life, and Tim is going to go into a little bit more detail on what I have to say. We really saw few product changes in 2000 with respect to UL. The initial focus, as I mentioned before, was on term insurance, and many companies just ignored the UL with secondary guarantees even though they were subject to XXX. Most companies that had the secondary guarantees in 1999 still are offering them without much change. Some (although few) companies have increased their premiums for the long-term guarantees. Some have eliminated the lifetime or no-lapse guarantee and kept the 20-year or 30-year guarantee around. I do think that 20-year and 30-year guarantees will continue to persist as we go forward, but the lifetime guarantee is really what the market is asking for and demanding. There are other issues going on within the NAIC with respect to nonforfeiture values for secondary guarantees. So, it'll be

interesting to see what happens to those as we move forward into next year. I know that several companies are working on modifications to their UL products to bring them in line with XXX, but it has been pretty slow to see those enter the marketplace right now.

With respect to product designs, we have seen shadow accounts and one company offer a shadow account as a way around XXX. LHATF issued a statement stating that the product is not exempt from XXX, but the company that offered it is still offering it at pre-XXX premium levels. There is some disagreement within the regulators as to whether or not this really should be subject to XXX or not. But the shadow account concept itself has received a lot of discussion. Within LHATF, there is a draft guideline that was proposed by Bob Potter to suggest how to reserve for shadow accounts and all of that under XXX. At the last LHATF meeting, there was a lot of discussion about ducks. If it looks like a duck, walks like a duck, and quacks like a duck, it's a duck. I think we sat through an hour of discussion on ducks, but at the end of the day, if you feel that it should be reserved or it's offering a guarantee, then it's a guarantee, and we should comply with the spirit of the regulation.

For UL, I do expect a lot of activity over the next few months or through the end of the year as companies start to bring their UL products in line with XXX. I do think long-term secondary guarantees will still be available, but they will be available at a higher premium, and I do think we're going to see some very unique or creative designs. There was another design discussed at the recent LHATF meeting, and it basically says that if the account value goes to zero or negative, the policyholder can replace the policy with a nonparticipating whole life policy that offers the same level premiums at the original issue age of the policyholder. Essentially that provides a lifetime, level premium guarantee, but it is not a secondary guarantee. It's not a shadow account. It's not a term product. There's a lot of discussion at the regulatory level on how to handle these types of products.

The regulators are on the lookout for abuses. There was a lot of discussion at the LHATF meeting. The task force wanted to open a XXX chatroom. They talked for several minutes about an XXX chatroom before one of the regulators finally said that the types of discussion or hits that they got in that chatroom might not be what they were looking for with respect to the product.

They are going to look at some other type of solution to try to improve the communication across all the different insurance departments in the 50 states to make sure that these types of products are being reviewed.

Over the next few months, I do expect competition to continue in the term marketplace as carriers try to jockey for position. New competitors will certainly enter the marketplace. We're starting to see that already. I think we'll start to see more New York carriers enter the marketplace. Although New York put in their emergency Regulation 147 order quite a while ago, New York companies have been fairly slow to react to the changes in the marketplace.

As I said before, companies will begin to introduce revised UL products with and without secondary guarantees. I think this is probably the area where we're going to see the most unique product designs as companies try to provide types of guarantees that appear as a guarantee but really aren't a guarantee. I do think we're going to see some more introduction of whole life products, especially from small and medium-sized companies that just can't compete in the competitive term market and the universal life market.

With respect to all product designs, I just want to end on this note. I think companies really need to be careful that they're working or trying to comply with the spirit of the regulation. Again, if it quacks like a duck and walks like a duck, it's a duck. The product actuaries are under a lot of pressure to try to come up with something creative and competitive in the marketplace. That puts a lot of pressure on the valuation actuaries to make sure that you're keeping this in mind. The regulators are really trying to look for actuaries to be accountable, but I'm not sure which actuary needs to be accountable for that. Hopefully the actuaries will be responsible and price, design, and reserve for these products appropriately.

MR. PFEIFER: I'm going to attempt to just add a few other pieces of information to the discussion you've already heard. I'm going to talk about two things. One is the 2000 CSO table. I'll give just a brief update on what's happening there. Second, I'll just add a few more thoughts on the UL with secondary guarantee issue because it is probably, at least in our consulting work, the biggest XXX-related issue on the product side. If we have a few more minutes, I might just

throw in a few other observations on some of the product development trends and XXX-related strategies that we're seeing some companies attempt to employ.

The 2000 CSO table is a table that is currently being developed, and this table is undergoing a development process that involves a multi-step process. First, the Society of Actuaries formed an Individual Life Insurance Mortality Table Research Task Force whose job was to develop the early stages of the basic 2000 CSO table. They leveraged off of experience coming out of the time period 1990 through 1995. The table that was created out of that experience is a 25-year select table. The task force of the Society will be putting together a recommendation of a basic table driven off of the 1990–95 experience that has some margins in it. That is expected to be done in early 2001, and from there, the ball will be handed off to an Academy task force, and the Academy task force will develop the official 2000 CSO.

Right now, the timetable for this task force to develop the next stage is being characterized as on track. Coincident with this are a number of issues that are being researched in the background. There are some public policy issues from the Academy perspective that relate to things like margins, smoker/nonsmoker issues, and those types of things. In addition, there are issues of how the 2000 CSO table will impact existing XXX rules. For example, will X factors still exist after the 2000 table is in existence? The thought is they probably will in a different form than they are today, but that's an issue that really has to be ironed out.

There are other key discussion areas associated with the 2000 CSO. How should mortality improvement be recognized? After all, the 1990–95 data are eight years old. How should mortality improvement be recognized from then until now and from now into the future, if at all? One big issue is the lack of data that exist at the older ages; those are typically characterized as issue ages 70 and above and attained ages 85 and above. The 1990–95 data represent an improvement on that score from some of the other tables we've been working with, but there still is a general lack of older age mortality. Jack Bragg has some expanded mortality data that he has made available to this task force to try to deal with some of these questions and form relationships. The older age question is a big one. To what degree can smoker/nonsmoker

distinctions be reflected? Is there any relevance to looking at distinctions within a nonsmoker class? Those are also key discussion areas.

There's a fundamental question with the 2000 CSO. Is this really a table that we want to see developed from a product competitive standpoint? Clearly, there are issues with elements like nonforfeiture values and basic reserves where those elements depend very heavily on the slope of the mortality table. A steeper mortality table is going to create increased requirements for nonforfeiture values and basic reserves. The general thought is that a 2000 CSO table will help reduce deficiency reserves, all other things equal, but we really don't know that at this point. It also appears that a 2000 CSO table is going to constrain guideline premiums for tax law purposes. For many companies, that's not a good development. Tax reserves would be another issue that could definitely be affected to the negative for some companies. Finally, maximum cost of insurance (COI) might constrain the ability of companies to design products that are built around mortality margins if the new 2000 CSO rates become the new ceiling for products going forward. There are a lot of issues related to the 2000 CSO beyond just what it will do for deficiency reserves.

The creation of the 1990–95 experience tables did occur in 2000. The next step, which is being targeted for March of 2001, is that the task force will produce the valuation basic tables. Then, Step 3, which, at this point, has an unclear timeline, is that an Academy task force will develop the official 2000 CSO, which would then be in place at some future date. Is it possible that we could have the 2000 CSO in place for January 1, 2002? It is possible, but we probably will not. We might be looking at January 1, 2003 as a realistic, effective date for the table.

As part of this overall project, there are some other ancillary aspects of the research that are being done, including looking at ways to avoid having to go through the process we're going through now in creating a new table. Can we create some simple formulaic adjustments to existing tables that allow us to update mortality standards more rapidly? Part of the process, in terms of developing this table, is also to look at ways that we can shortcut the process in the future.

I'll add a few comments to those of Mary on the UL side. I would agree that 1999 was definitely the year of term product focus. In 2000, 43 companies have really begun to look at their universal life products in relation to XXX. Those with long-term guarantees have really taken center stage. Although I think XXX clearly applies to UL with secondary guarantees, there are still questions about how XXX applies to vanilla UL. There seem to be differing opinions among different regulators as to the ability of a nonsecondary guarantee UL to take advantage of X factors or not take advantage of X factors.

One of the key questions for ULs with secondary guarantees under XXX is "what is a secondary guarantee?" We've done quite a bit of work with companies that have been trying to define guarantees that are not specifically addressed under XXX that are legitimate secondary guarantees. It can also be argued that they don't fall within the secondary guarantee concept, whereas variable UL is kind of an easy argument. As Mary said, few companies are taking that attack specifically. We've seen companies trying to do specified premiums that follow more of an ART scale. We've seen the use of guaranteed insurability options as a way to try to circumvent or evade having to fall specifically within the XXX rules.

The more that we have worked on this, the more we have concluded that it is extremely difficult, given what's coming out of the regulatory community, to develop products that are basically "ducks" and to reserve for it as something that's not a "duck."

Shadow account values, at one point in 1999, were viewed as an intriguing option for companies to look at. In our client work, we really don't see any companies that feel going the shadow account approach is really a viable way to avoid XXX and extend the guarantee. We do see activity on the nonforfeiture side, as Mary mentioned. I understand there's actually a new industry proposal on the nonforfeiture side that's getting a review by the regulators. That whole issue might be taking a different turn as well.

What have companies done with respect to UL and secondary guarantee? For many reasons, insurers have been slow to shorten their guarantee periods or raise premiums. Those reasons range from things like, for some companies, the administrative system was not ready on

January 1, 2000, either due to Y2K issues or other issues. It wasn't that the company necessarily found a great way to deal with XXX and secondary guarantees. They just didn't have time to work on it. Those products have continued to be offered. In other cases, companies were domiciled in states that required larger UL reserves before XXX. For example, California domiciled companies were holding reserves for UL under the California method. California had not adopted XXX until July. These companies that were selling in states other than California, who had adopted XXX, were able to justify pre-XXX products because there was a reserve cushion that they were already holding due to the California approach. Now that California has adopted XXX, it is clearly less easy to do that.

So there are a number of reasons when you look deeply into why companies have not moved on XXX. In most cases, it's not because they have figured out an easy solution. In situations where carriers have reacted, we've probably seen the typical approach being one of offering a number of options. You can pay more premium and have a longer guarantee. In those cases where companies have offered a choice, the version where the higher premium is offered with the longer guarantee probably doesn't fully cover the theoretically correct premium increase that XXX might suggest. I think companies are inching forward. They're afraid to come out with something where the premium is too high.

I think the other issue that we've seen is companies really spend a lot of time carefully looking at segmentation and their X factors. I do think that companies are being very creative in their approach to X factors, and some of that has been happening on the term side. It's also now starting to happen more on the UL side as it gets more attention.

Designing survivorship products is a real tough issue with secondary guarantees because the nature of that market is focused on estate planning. Very often, the sale relies on the ability of the product to guarantee that if the policyowner pays a specified premium, they will have coverage forever; that's often the nature of that sale, and it's very difficult within an XXX environment to make that happen. Survivorship products have become an especially tough area for companies to deal with.

Let me just add a few more comments, and then we'll throw the discussion open to questions. I guess I would generally agree with Mary's observation that the long-term guarantees have surprisingly been where the action has been on the term side. We've talked to a number of companies who say that anywhere from 66% to 95% of their sales are in products that have 20-year or longer guarantees. Many of them believe it's commission driven. Producers are going where the commission action is. In some cases, as Mary alluded to, some companies have lowered commissions both at the low guarantee zones as well as the higher guarantee zones, so there could be the feeling that some agents are feeling the commission squeeze and going for the higher compensation.

We are seeing increased interest in the 30-year products, and I guess I'm not sure whether that's largely or partly reinsurance driven. But it does seem like, in the last few months, there has been a lot more interest in designing something for the 30/20 market or the 30/30 market than there had been earlier.

Another way to deal with XXX is to lower your profit margin. Companies are doing that in some cases. We've also seen some companies that price on a profit margin basis begin looking at lower discount rates justified on the basis of the plan being 90% reinsured. Such carriers think that the discount rate ought to reflect the risk that the carrier is really taking. For example, instead of using a net investment earnings rate of 7% as the discount rate, they'll discount profits at 6% because 90% of the risk is in the reinsurer's lap. Things like that are going on as ways to try to keep the profits up there.

On the reinsurance side, it seems like the reinsurer is more often asking for and getting part or all of the policy fee in the arrangement, particularly for companies that are extremely competitive on the term side. We've seen one company looking at an interesting design on a 30-year term product that would make use of cash values and loans as a way to try to deal with getting a competitive 30/30 guarantee on a net basis. This design does not try to evade XXX, but lives within the fact that a 30/30 product can offer cash values and use cash-value loan relationships to pay for some of the gross premium. The out-of-pocket net premium to the policyholder could be competitive.

MR. WAYNE E. STUENKEL: I have got both a comment and a question. I'm the appointed actuary for two companies that are domiciled in Tennessee. We've just heard from the Tennessee Insurance Department that they're likely to adopt XXX some time in 2001. That's part of the codification stuff to kind of brings it all into play. There's no certainty about that, but they've told us informally that they'll do XXX next year. I have a question relating to a return-of-premium-type benefit. Is there any view that you would have or that regulators would have about a return of premium on a 10-year guarantee, 20-year level plan? If you've raised the rates in that nonguaranteed period, then there'd be a one-year refund of premium. Is there any view from the regulators as to how the one-year guarantee or the one-year return of premium should be reserved for, if at all? We've tangled ourselves up. We can't really see how you'd reserve for that.

MS. BAHNA-NOLAN: To the best of my knowledge, there hasn't been a lot of discussion at the regulatory level regarding how to reserve for those types of guarantees. There are only a few companies that actually have them out there now, and I don't recall what they are doing there. It's my guess they are not holding an additional reserve or filed with an additional reserve for those one-year guarantees.

MR. WILLIAM C. KOENIG: I'd like to thank Mr. Spencer for referring to the Draft Standard of Practice. You really should read it. At the recent Life and Health Actuarial Task Force meeting of the NAIC, one regulator expressed the opinion that it was terribly permissive and that he was going to submit his own comments along those lines. If you don't feel that the standard is terribly permissive, the Standards Board would appreciate your comments.

FROM THE FLOOR: We have a small block of term business that we've been working and for which we are developing some X factors. I wonder if you have any comments on what you think is appropriate in terms of aggregating mortality? In looking at XXX, some of the wording there is confusing. It says that after applying the X factor, your rate should not be less than your anticipated mortality rate, which would seem to indicate that you'd have to break that down at least by gender and age, duration, and mortality class. Then other parts refer to aggregating some of that experience.

MR. SPENCER: Sure. From a reinsurance perspective we've had companies send us reinsurance quotes in which they've used one set of X factors for an entire product. There are X factors for a 10-year term plan, male/female, all the tobacco/nontobacco classes, preferred, standard, and so on. I think aggregation means evaluation at whatever level you decide to set your X factor classes. The admonition was to consider setting X factor classes where there were distinctions in mortality, but it's just a suggestion. It's not a requirement. The ultimate test of aggregation is at the company level in theory, and if the company's experience does not justify the set of X factors in total, then you're required to work back down through the process and identify those X factor classes that are deficient. I think you do have a free hand in terms of setting X factor classes. If you're looking at a relatively small block, it might make sense to keep X factor classes at the very minimum number that would still provide you with the kind of distinctions you need.

CHART 1

$\frac{1}{2}c_x$ Reserves: Minimum versus Sufficient

