

# **RECORD, Volume 28, No. 3\***

---

Boston Annual Meeting

October 27-30, 2002

## **Session 28PD**

### **Raising Earnings On Long-Term-Care Insurance Through Asset/Liability Management**

**Track:** Long-Term Care/Investment

**Moderator:** MARK D. NEWTON

**Panelists:** MARK D. NEWTON  
RICHARD B. PITBLADDO  
LARRY H. RUBIN

*Summary: The long-term nature of the liabilities associated with long-term-care insurance (LTCI) contracts presents unique challenges and risks for asset/liability management. Failure to adequately identify and address these risks may result in inappropriate investment strategies and forgone profits. Panelists identify the unique challenges and risks associated with asset/liability management and explore possible solutions to the challenges identified.*

**MR. MARK D. NEWTON:** I want to introduce our panelists: Richard Pitbladdo, president of Long-Term-Care Global Solutions and Larry Rubin, managing director at Bear Stearns. All of us have been on panels talking about roughly the same thing for more than a year now. There are two differences today. The first is that, in the past, we've always told you that there might be a problem, and you should start thinking about it. Today we're telling you that there is a problem, and you better have started thinking about it.

We're also going to delve a little more into solutions today. In the past, we've talked about how to identify the problem, how to understand it in long-term-care (LTC) pricing and in managing a long-term-care line of business. We've talked about the pros and cons of several possible solutions. Today, we're going to delve a little more into details of specific solutions. The cons outweighed a lot of the pros in

---

\* Copyright © 2003, Society of Actuaries

## **Raising Earnings On LTCI Through Asset/Liability Management** 2

some of the solutions we have talked about before. We're skipping over those solutions today completely and just talking about a couple of solutions that may be more doable.

As I said before, we want to talk about raising earnings. It's not just raising earnings, though. Some companies are focused on absolute dollars of bottom line. That's how I would define earnings, or earnings per share. Other companies want to look just as hard at the ROE part of the equation. I don't know if it does you too much good to earn a lot of dollars at a three percent ROE. It just doesn't make any sense. So we need to talk about the capital base that you want to deploy toward this line of business as well.

Today we're going to talk about pros, and "pros" in two senses. First of all, the panelists are absolute pros. You'll enjoy hearing from them if you haven't before, but also "PROs" in terms of the goals of today's presentation. "P" stands for pertinence, "R" for review, "O" for options and "S" stands for summary, and if you don't understand that now, by the time I beat it to death and Richard beats it to death and Larry beats it to death, you'll understand that interest rates in today's environment have a big effect on long-term care.

We want to review the interest-rate risk in long-term-care insurance, just to make sure that everybody is up to speed on what that means, and we want to talk about some options for potential financial solutions. These will depend on what your environment is, but we can generalize what we see as solutions to almost any insurance company. At the end, we'll summarize and then take your questions.

Any time you do pricing, you make several assumptions about the future. Insurance companies essentially make bets on those assumptions. But I know that whatever happens, it's certainly not going to be what I priced. I need not only to understand what the price represents and what the range of possible economic outcomes would be, but also the range of my potential solutions. When it does happen that I am wrong, I understand that there's a problem earlier on or I understand that there's an opportunity much earlier on. I have my range of solutions all set up and ready to go. What I want to do is set up my strategies in the beginning for what could happen, so that I know absolutely which way I want to go when my errors become a reality.

Let's talk about pertinence. We put together our presentations probably a month or six weeks ago. I can say that the interest rate environment is different than it was even four to six weeks ago, but at the time we were putting together our presentations, interest rates were at levels not seen for probably 30 or 40 years, at least in the Treasury market. One of the headlines of *Investors Business Daily*, the newspaper that I happened to be reading that day, was "Japanese T-Bond Sale Finds Buyers Wanting." I don't know in how many industrialized, Westernized countries a government can put T-bonds out and have them undersubscribed. It doesn't often happen, but in Japan, it finally happened.

## **Raising Earnings On LTCI Through Asset/Liability Management** **3**

The public debt in Japan has been exploding over the last decade or two. It was expected to hit 150 percent of gross domestic product (GDP) this year. The yield was 1.2 percent. Another headline was "Yield Of 1.2% Is Problem." But it even goes deeper than that because Japan has been in an economic muddle. There have been several iterations of what the government policy should be. The newspaper was polite and said, "Policy Confusion May Underlie the Market Reaction." If I could find the policy to be confused about, that would have helped me at the time. What some people never thought could ever happen, happened in Japan. You can say that's localized to Japan? that's a special economy in a special place.

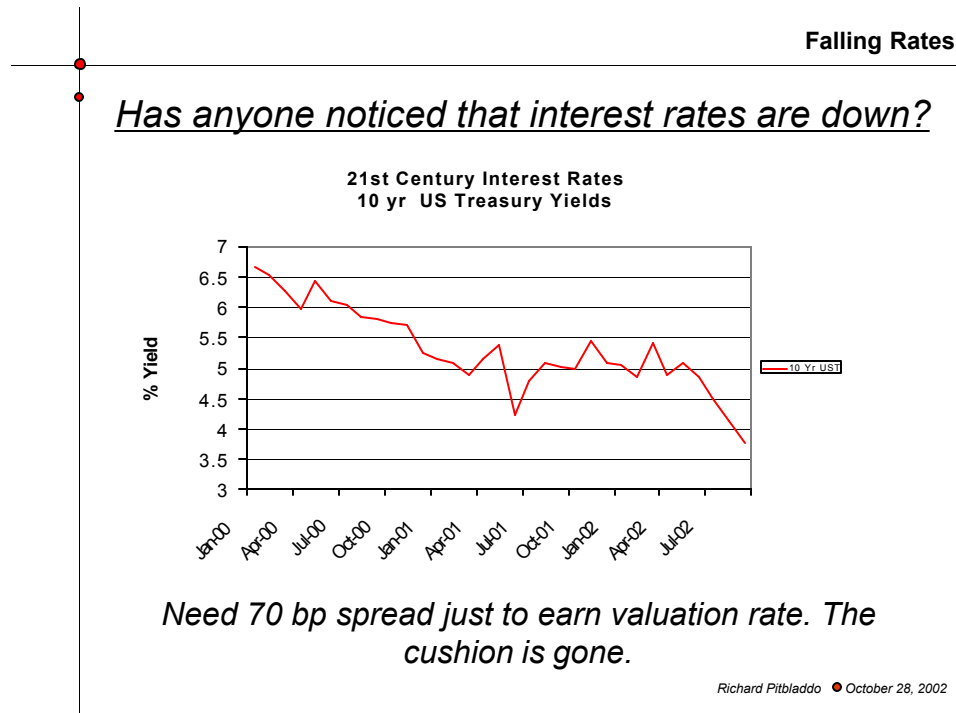
But in Europe, on the same day, it was no better. The headlines were "Germany Is In The Cellar," and "The Germans Are In A Real Pickle" because their budget deficit was 3.5 percent of their GDP. It's still rising. You could be kind and say that unemployment is flat there, but neither political party, as they were going through the election, had much of a solution. We look at Japan as one possible economic scenario, and then we look at Germany and, for that matter, the rest of Europe, and say that's another economic scenario, but are the scenarios that different?

Then you could look at the United States and ask if it could happen here. In my earlier actuarial days, I would have said "No way." The United States is a special economic situation. But as I've learned more and looked more at the absolute problems these countries are facing, I've decided that what I thought I once knew I really don't know anymore. The situation that Germany and Europe find themselves in, the situation that Japan has been in for a very long time, in my mind *is* a possibility for the United States and for most of the Western world. I can no longer say that it's not possible for it to happen here. Now you could put your own assumption about whether that is a likely scenario or a remote scenario; I'm just saying that it is one possible scenario that I don't want to have happen anymore. So, could it happen here? I tell myself I'm only an actuary and that I'm not in the prediction business, but it could happen here.

**MR. RICHARD B. PITBLADDO:** How many in the audience have refinanced their home in the last year? Look at all that. How many have refinanced their home twice in the last two years? Three. How many are starting to get worried about their long-term-care business?

I detect an awareness, because of your actions, that interest rates have come down during this decade, as you see in Figure 1. They've come up now, since this was prepared with a press deadline, not yesterday, about 40 basis points in terms of the 10-year U.S. Treasury, but if you add 40 basis points on this graph, that brings it up just a tiny bit compared to where it's gone down. So whereas in the last three weeks there seems to have been a dramatic interest rate increase, within the context of this graph it's a drop in the bucket. The 10-year Treasury is still below the long-term-care valuation interest rate. We thought of that 4.5 percent valuation interest rate as a number so low that it stretches our imagination. Our investment earnings can be down to there.

Figure 1



What does this mean for managing long-term-care blocks of business? We may be in for some rude awakenings as we enter the season in which we go through testing of active life reserves on various bases on a statutory and a GAAP basis. The cash-flow testing margins will have a hard time on some of the downside interest rate scenarios for those that go through the "New York Seven". We know that long-term care has its problems. It might be a nice, robust product, but it has problems when it comes to capital strain. It can ill-afford the prospect of having active life reserves strengthened at the same time that the new business is straining capital.

Let's talk about GAAP recoverability. It's not a fun process to recognize losses on a long-term-care block and have that run through shareholder-reported earnings. Even if it passed "threshold tests" relative to last year, we're facing blocks of business in which the tail performance is projected to be quite a bit less than it had been during the times the products were priced.

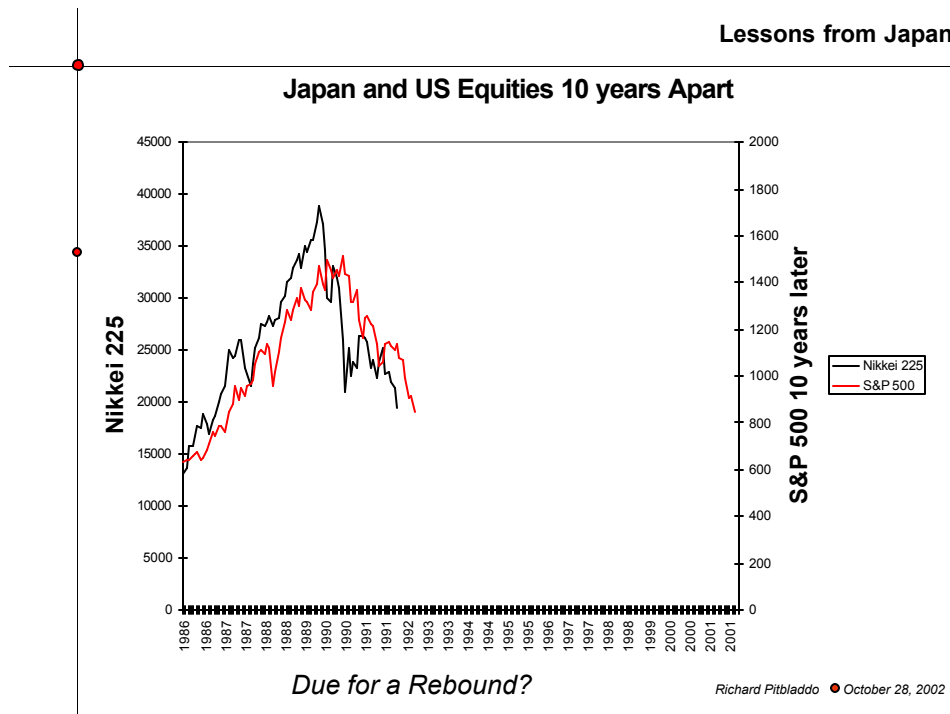
What can we do about it? I break this category into two areas, one in terms of product development. Get out a new product that addresses the risk concerns pronto. Second, find ways to protect the in-force block from further rate deterioration. This can take the form of portfolio structuring or hedging actions to lock in interest.

Before we get in more detail here, let's take a look at the comment, when I suggest this to companies, that I'm most likely to hear. "Yeah, yeah, yeah, I know. I should have hedged the risk before rates fell, but if I do hedge now, I'll be locking

in rates at 40-year lows I think I'll wait for them to come back up and then lock them in." I don't know how many times I've heard this from different sources. My comment on that is, yes, interest rates may increase, but this is the logic employed in Japanese insurance companies year after year after year. It did not work. Rates never came up enough to lock them in, and now we have Japanese companies going insolvent one by one.

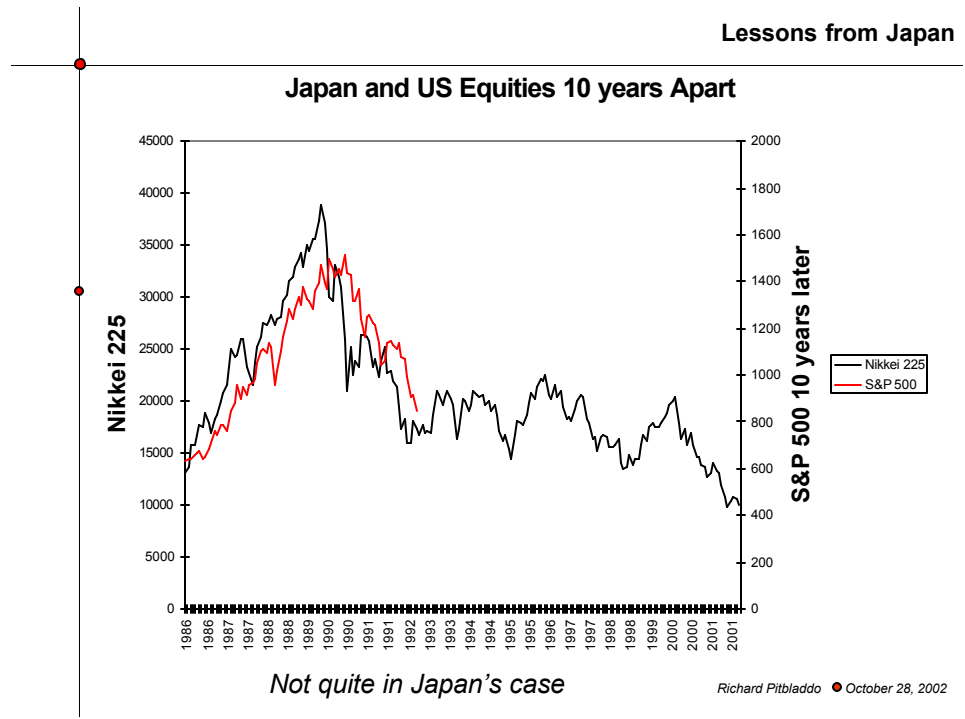
This is where it gets a little scary. Let's take a look at some data in Figure 2 that shows parallels between the U.S. economy and the Japanese economy if we shift the Japanese economy 10 years." Take a look at the equity markets. In either case, look how far equities came down. They're bound to bounce back up, right? You can't imagine them coming down much more. So, we can expect a rebound in equity markets.

Figure 2



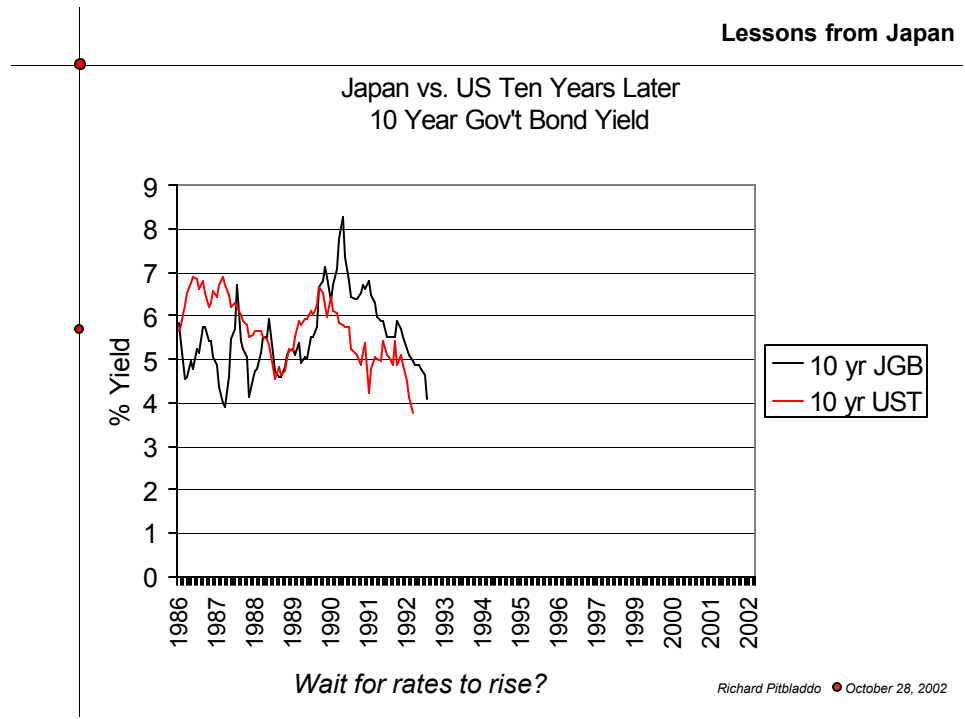
At least with Japan we have some data, shown in Figure 3, to confirm whether that was the case or not. We find that equities continued to underperform. Japanese investors, or international investors in Japanese equities, continued to lose money to the point where, after a slight rebound such as we're experiencing now, equities dropped down to half what they were at this corresponding point, let alone where they were at their peak.

Figure 3



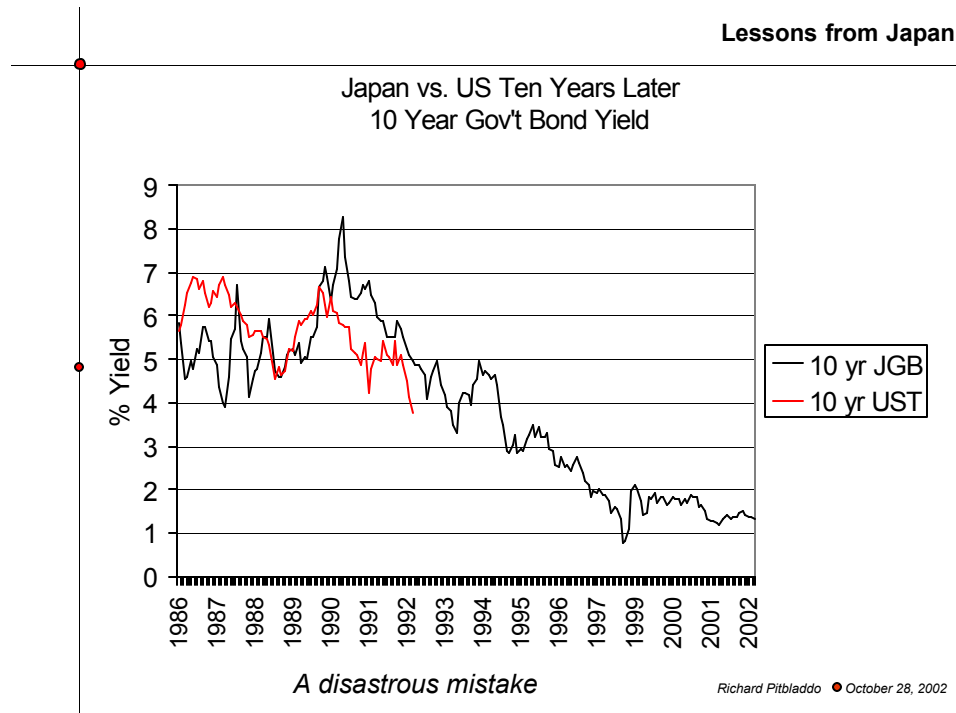
What about long-term care? Why am I talking to you about equities? Let's fast-forward to fixed-income markets. We tend to invest in bonds instead of equities. The fixed-income markets don't track as tightly as the equities, but there are some similarities, as shown in Figure 4. Rewind 10 years to Japan. Interest rates had recently dropped from above eight percent to four percent. I can bet you that these are the same conversations that were going on in Japan. Why would I lock in rates now? Why don't I wait? They're down at four percent. Why don't I wait until they come back up to five, maybe six, you know, halfway back up to where they were before? Maybe come back up to 5.5 percent? Then I can lock them in. But, shoot, my actuaries have priced at 5.5 percent, and if I lock in four percent, I'm locking in a loss. So, let's wait."

Figure 4



What happened? Figure 5 shows what happened. We get a little rebound and then decline, decline, decline. Rates never came up to five. Rates never came up to 5.5 percent. Rates never came up to six. I want you to take a look at this picture, digest this picture and imagine. In previous seminars, we talked to you about the sensitivity of long-term-care blocks' interest rates. We never did harp on the question, "Where can they go from here?". Now, hopefully, everybody has digested previous conversations and understands how important the interest rate is for long-term care. But I don't think anybody is taking seriously a scenario in which government 10-year rates go down to 1.5 percent. We kind of laugh at the New York Seven scenarios. Interest rates go down 300 basis points from now? No way. Yes, way.

Figure 5



There were a lot of comments from this morning's general session. There was a question—will we follow Japan's path? Is this picture of deflationary spiral an inlier or an outlier? We were very comforted to learn, from the answer to that question, that because of the last month's change in economy, this scenario, in the mind of the speaker? maybe not in the mind of the marketplace, but in the mind of the speaker? is now less than a 50/50 chance. Realize that in the speaker's mind, it's may be down to 45 percent, so you all can be really comfortable. Will we follow this path? Not necessarily.

I liken it to driving near a cliff. There's a very good chance that if you're one foot away from the cliff while you're driving, you're not going to fall off the cliff, you're going to make it and you're going to say that there was no problem. There's a very good chance that interest rates will rebound. The stock market will rebound. We'll come out of this. But is it in the realm of possibility? Is it one of the stress scenarios that we should be seriously concerned about as actuaries? Yes.

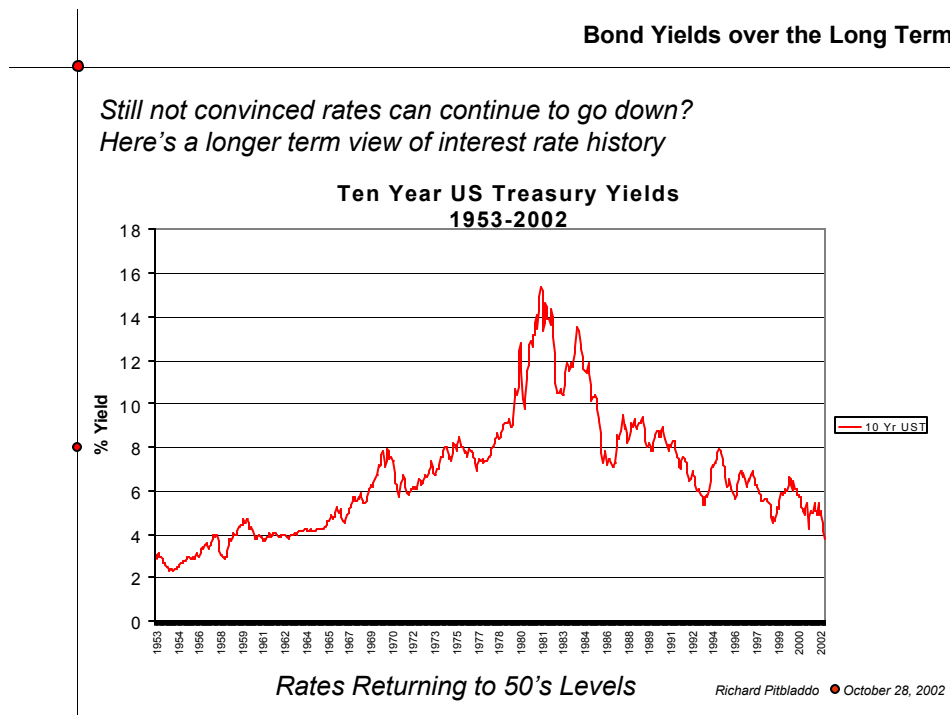
There's no way we can rule out a scenario that has actually played out in industrial economy over the last 10 years. If we remove that from our possibilities, then we're being totally imprudent. You hear people from the Fed say that it can't happen here because we have a different banking system. I took one thing away from my graduate education in macroeconomics? that I don't understand macroeconomics. But I got close enough to the top people in the field to understand that nobody really does. Although portrayed as a science, macroeconomics is more of an art. In the case of Japan, what was thought to be



expansionary fiscal and monetary policy turned out in hindsight to be contractionary. That could be happening right here, right now. A key point that the speaker at the general session emphasized is that the risk of a deflationary scenario is one in which the few control levers we have over the performance of the economy get dissipated. There's one key fact here. There's no way the Fed can make interest rates drop below zero. If what it needs to do, in theory, to keep the economy from continuing a deflationary spiral is reduce interest rates to zero, it's a "no-can-do."

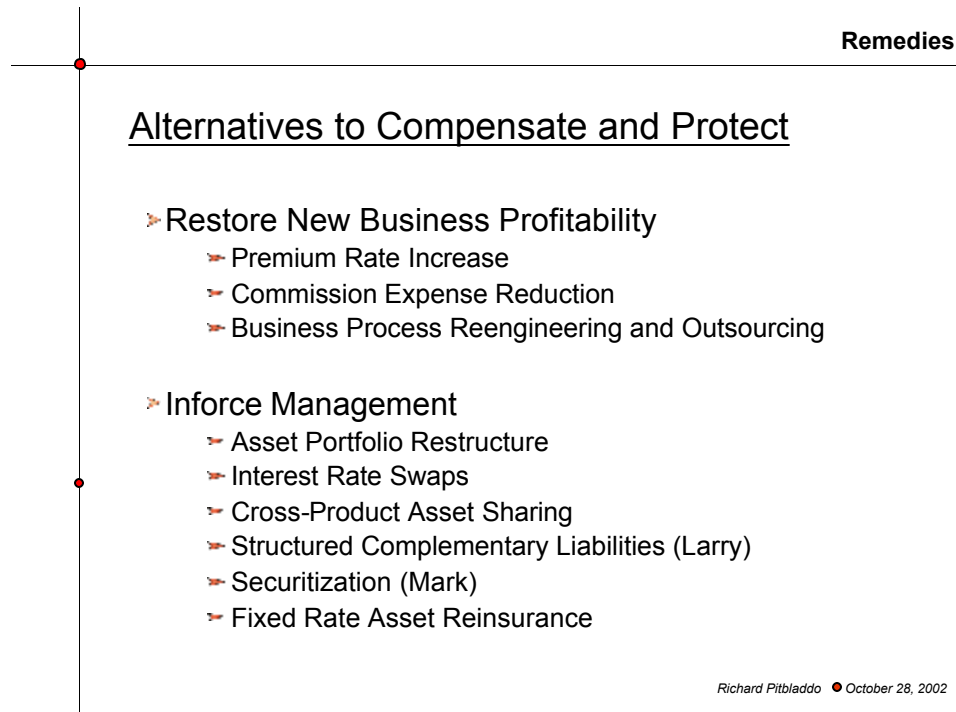
A lot of people talk about mean reversion as some sort of gospel. Mean reversion always has a couple of different interpretations. What are we reverting to? Are we looking in the rearview mirror for two years? For five years? For 50 years? Take a look at this graph of Treasury yields in Figure 6. I can look at that and say that mean reversion tells me they're going to come up. I can also say that there's a pattern there where we're essentially reverting to a long-term mean of something north of two percent. It's just another cut at it. Again, I'm not trying to say that we're inevitably going to follow the path of declining interest rates, but, as actuaries, we can't ignore that. Since it's such an important element of the solvency of the insurance company, because long-term care is a real long-tail risk out there for a company? all the other liabilities will be rolled off by the time 20 or 30 years comes over. We have to be careful.

Figure 6



What can we do? Alternatives are shown in Figure 7. "Restoring new-business profitability is probably one of the first things on the agenda, and that does not need to be just in terms of premium rate increases or cutting commission expenses. There are also other things that companies can do to take out ongoing base cost from the business. Right now, many direct writers have expense structures that are fairly bloated because they try to do everything. They try to do every process, and some are more efficiently done on a higher scale by specialists.

Figure 7



Turning to in-force management, there are a number of things you can do, all in the financial area: restructuring the embedded fixed-income component of the assets and liabilities; restructuring the asset portfolio; using derivatives, primarily interest rate swaps; trying to take advantage of natural synergies across products; possibly creating those synergies by structuring particular liabilities; securitization; and my latest project, dealing with interest risk management through a reinsurance mechanism, where the reinsurer is responsible for all the hedging, et cetera, and the direct writer or reinsurer mitigates this risk through reinsurance mechanisms that I'll describe later.

In the context of what you can do to a long-term-care asset portfolio, the very clear answer is to lengthen the duration of your fixed-income instruments. Acquire zero-coupon bonds because our problem is a lot of positive cash flow coming over the liabilities and reserve buildup on the liability side. It's pretty nice to complement that, or at least not add insult to injury, by having positive cash flow coming off the

## **Raising Earnings On LTCI Through Asset/Liability Management 11**

assets. Positive cash flow is the enemy of interest rate risk for long-term care, and wiping out the positive cash flow from the assets is good. Zero-coupon bonds are instruments whose book value accrues over the time and to a certain degree, keeps up with the accrual of the statutory reserves or GAAP reserves on the block.

Get rid of callable bonds and mortgage-backed security pass-throughs, because these are instruments that disappear just when you need them. They get called when interest rates are falling when you need the protection of fixed-income assets. They roll over into the new low rate, so they're no good. Stay away from equities. Why do I stay away from equities? We generally see that equities underperform exactly at the times that interest rates are going down, like right now or in the last couple of years. Interest rates are coming down. Credit risk happens. Equity risk happens. All these things are stacked against us.

What other advantages besides risk management would I have from longer durations? Generally, we have this positively sloping yield curve. We're riding up the yield curve. We'll have higher yields by lengthening the duration of our portfolio. There is some cost to that in terms of increased credit risk. For example, an investment-grade bond of 30 years has a lot more credit risk in it than an investment bond of two years or five years. But that's generally a worthwhile trade-off. Another disadvantage, especially if you're looking at long-term care in isolation, is that this is just a tiny bandage that doesn't do anything to stop the bleeding. The problem with long-term care is that your assets are out there in the future, and you can't do much with the assets you have today because they're so puny compared to the massive assets you're going to have to be investing ultimately.

Interest rate swaps have been, at least to my knowledge, the most highly successful implemented program for long-term-care writers. Two major carriers have used forward start receive fixed, pay floating interest rate swaps. Larry will talk about the execution of those in more detail. Let me just indicate some advantages. It's a low credit risk solution. You can use various credit-protection mechanisms so you don't have risks in the swaps themselves. It's very effective. If you do enough of this, you will effectively and completely mitigate the interest-rate risk.

The disadvantages are legendary in terms of getting them through insurance companies' bureaucracies. These issues are not only working through the economics of it, but are also working through the accounting, especially the GAAP accounting. We have Financial Accounting Standard (FAS) 133 now, which makes it problematic to fit through all sorts of boxes to effectively manage our risk without creating a lot of completely irrelevant? except to the CFO and the shareholders? GAAP income volatility, which is economically irrelevant but very relevant from a shareholder-reporting perspective.

Interest rate swaps can get complicated in terms of the requirements for the collateralization of them. That's not a big issue. It shouldn't be a major concern.

## **Raising Earnings On LTCI Through Asset/Liability Management 12**

That's just one more operational thing you have to do to get through the bureaucracy, and that's part of the reason for delay. You get some spread risk; you're not locking in corporate bond spreads, and some people want to lock in corporate bond spreads. I generally don't like to lock corporate bond spreads because I know that when spreads are wide, that means credit risk is bad? but we don't have to get into that.

That's another thing I didn't mention. I show interest rates being down in terms of Treasuries, and certainly swap rates are down, but a lot of people come back and say that their corporate bond rates are still up high because the spread is very wide at the same time the base rates are down.. Well, you don't get spread for free. Generally, when your interest rate spreads are wider, that usually is a red flag that, over the next period of time, there's a substantial probability of credit risk? events happening? and we've seen that happen over the same period of time. We've seen spreads widen out.

Just restructure the asset portfolio if you're talking about long-term care alone, but what if you can fit products together? Not too many companies, especially not too many successful companies, only issue long-term-care policies and have no other insurance liability. Suppose you also had a block of single premium immediate annuities (SPIAs) where you get a bunch of money up front. The problem with long-term care is that you don't get a bunch of money up front. With SPIAs you get a whole bunch of money up front, and the liability structure is a life annuity.

With long-term care, your premium coming in is really, when you think about it, a life annuity. We'd like to have it be more than a life annuity and we would like to have a lot of lapsation going on, especially out on the tail, but that doesn't happen. The termination of premiums generally follows mortality, very closely matched to a life annuity. It makes sense that you could match the long-term-care premiums coming in against the SPIA benefit payments. Then you'd be free to use the single premium from the SPIA policies and cash match that against long-term-care benefits. So, finally, you get a pile of money that you can match to the long-term-care benefits. This is an example of utilizing fairly well cash-matched synergies between two liabilities, so you can invest for the combination more efficiently than you can invest for the parts.

What are the disadvantages of this? This is great for a small company where there's one management of all product lines. But I'm imagining bigger companies where there's one manager in charge of annuities, and there's another manager in charge of long-term care. They might love each other, but they still want the profit in their own profit center to be high. We're investing for the pool? how do we divide up the investment income? How do we take some of this advantage and pool it over and hence into long-term care? How do we make sure that the immediate annuities don't all of a sudden get priced at the higher rate that's further out on the yield curve than where they should be priced, which is according to the cash-flow pattern of the liabilities, not the assets that are invested for these? These are difficult

## **Raising Earnings On LTCI Through Asset/Liability Management 13**

internal bureaucratic mechanisms that have to be worked out before this is implemented. It's my experience that the greatest threat to effective implementation of interest risk management strategies is the bureaucratic lag.

That leads us to what I've devised as a way to get around all this? fixed-rate asset reinsurance. A company could take its long-term-care business and cede it to a reinsurer on a coinsurance basis. You get rid of all your risk? interest rate risk, morbidity risk, persistency risk? but this reinsurer is a finite reinsurer and doesn't want to have all that morbidity and persistency risk. That's really your business. You get it back to you in a way that has the interest rate risk and the investment risk filtered out. So you get it back modified coinsurance (modco). Instead of rates that depend on the insurer's company portfolio yield, you get the modco adjustment set at rates that are absolutely fixed and guaranteed. They might be time profiled. They might not need to be level, but they're fixed. If you put these two contracts together, basically the reinsurer is saying, "I'll give you the money that's backing my reserves, and you give me a fixed rate back? fixed, predetermined, guaranteed rate on those reserves." It's like a guaranteed investment contract, but against the long-term-care statutory reserves.

Why do I like this? I like this because it has the fastest implementation, especially for a long-term-care product line manager who has authority over reinsurance, or at least more localized influence over reinsurance, and doesn't have to convince the whole investment department to do something that *you* want them to do, and, in turn, if it involves the investment department and the product line, it's got to involve senior management, too. This is a solution that's more likely to be successful and developed from the bottom up. It's scalable. Some of the derivatives programs and some of the securitization programs you'll hear about only work at a reasonable scale. This can be done on a more scalable basis where if you're a small company, you actually can do this. If you're a big company, you can do this more often or more frequently or dial in more precisely how much of that risk you want to allay.

It's the most complete protection against investment risk because you get rid of the credit risk, too. You're protected against the problems that arise when you put a hedging program in place. Retrospectively, the hedging doesn't really balance; the hedging program would have worked perfectly prospectively but not necessarily retrospectively. Surprisingly, we have found that this structure is also a very effective mitigant for the capital strain in long-term care. So it really moves the dial on ROEs and ROIs more than we anticipated.

There are some disadvantages. You've got to make sure that you don't replace your credit risk in your asset portfolio with reinsurer credit risk. To the extent you're not dealing with a AAA reinsurer or something like that, make sure you have appropriate collateral protection so the asset and the income on the assets are there when you need them.

## **Raising Earnings On LTCI Through Asset/Liability Management 14**

Let me summarize what I've been talking about. A common theme across our presentations is the bad news: interest rates are low; credit risk adds salt to the wounds; you might think it's bound to get better, but it could get much worse; as actuaries, we are chartered with protecting the financial solvency of the company and protecting the interests of the policyholders, and when we do that, we're not supposed to rely on hope that things would get better. We're responsible for covering a majority of the contingencies, and right here the majority of the contingencies include the interest rate projections that I showed you. I want to help everybody get over the denial that's generally out there, in terms of that *can* happen and we have to worry about that.

The good news is that there are lots of remedies available? some that work over time, some that can be implemented more quickly, some that are more effective. All generally work out well and all will increase the financial performance, usually of the business, using the usual yardsticks? ROE, ROI. When you lock in yields with any of the strategies we were talking about, you're locking them in at rates higher than you can get currently in the market. You're basically locking in the market expectation of where interest rates are likely to rise to, so you get that. Interest rates would have to increase more than 100 basis points for this to be something that didn't work out in hindsight.

**MR. LARRY H. RUBIN:** How many people today, if they could have hedged their long-term-care interest rates at least year's level, would do so today? Surprisingly, last year, when Richard, Mark, and I first started talking about long-term-care interest rate risk management, the comment we constantly heard was, "Why would I want to lock in rates at such a low level?" In my practice, I consult with numerous companies in hedging their interest rate exposure for level premium policies. The typical response we get is, "Why should I hedge now? Interest rates are so low. They will eventually revert to the mean." A lot of this comes from portfolio managers and the like; sometimes I think actuaries don't have enough input into this process.

Going back to 1953, the real rate on a constant maturity Treasury (CMT), less CPI was 2.65 percent. If you take our two percent inflation rate? let's be a little aggressive and assume we can get two percent inflation? and a 2.65 percent mean credit rate (again, let's assume that at least the real rate will revert to the mean, and, in fact, it's actually there today), we end up with a 10-year Treasury going forward of 4.65 percent. That seems reasonable. On October 25 of this year, that rate was 4.1 percent. So, we should expect rates to rise.

But we don't buy Treasuries in our portfolios. Our portfolio managers tend to buy credit instruments and get credit spreads. We're going to be a little aggressive in this, and we're not going to care what Moody's says about being a little risky in our asset portfolio. We invest our entire long-term-care assets in BAA bonds. Any idea of what the real return on BAA bonds has historically been? The answer is 1.66 percent. We're going to take our same mean reversion and add our 1.66 percent to

## **Raising Earnings On LTCI Through Asset/Liability Management 15**

our 4.65, and we expect reasonably a total gross yield of 6.3 percent. But wait, we're not done. Remember, we decided to be a little aggressive and do the BAA bonds. BAA bonds don't have a zero default rate.

Let's take a look at Moody's average 10-year historical default rate for BAA bonds. From 1970 to 2001, this rate was 5.09 percent. If we expect 5.09 percent of our bonds to cumulatively default after 10 years, we would need to set aside roughly 40 basis points a year of spread to pay for our expected defaults. Let's go back to our mean reversion. Whether you believe in any of these doomsday scenarios, whether you believe in mean reversion or whether you believe in looking up the implied forwards, which are also shown to be a somewhat upward-biased predictor of where rates are going, the natural conclusion you reach is that if your long-term-care policies are priced above 5.9 percent, you have an interest rate bet on your books that increasingly looks like you're going to lose.

How can we fix the current position on our books? Are there actions we can take today or can we take certain bets today that will at least take us from a position we expect to lose, to one we expect to win?

As shown on Figure 8, I priced a five percent increasing-benefit policy issued at age 65 under the following assumptions and tried to take into account our view of rates going forward, a 5.9, with some margin for adverse deviations, and used 5.5 percent. We come up with a premium of about \$1,700 for this policy. Here on Figure 9, we see the cash-flow pattern for this policy, which all actuaries are familiar with. For 19 years, we receive excess cash, which we invest to accumulate the reserve in order to begin this investment period beginning in year 20, and, if we priced the product right, when the last policy leaves we will have zero assets on a net basis.

Figure 8

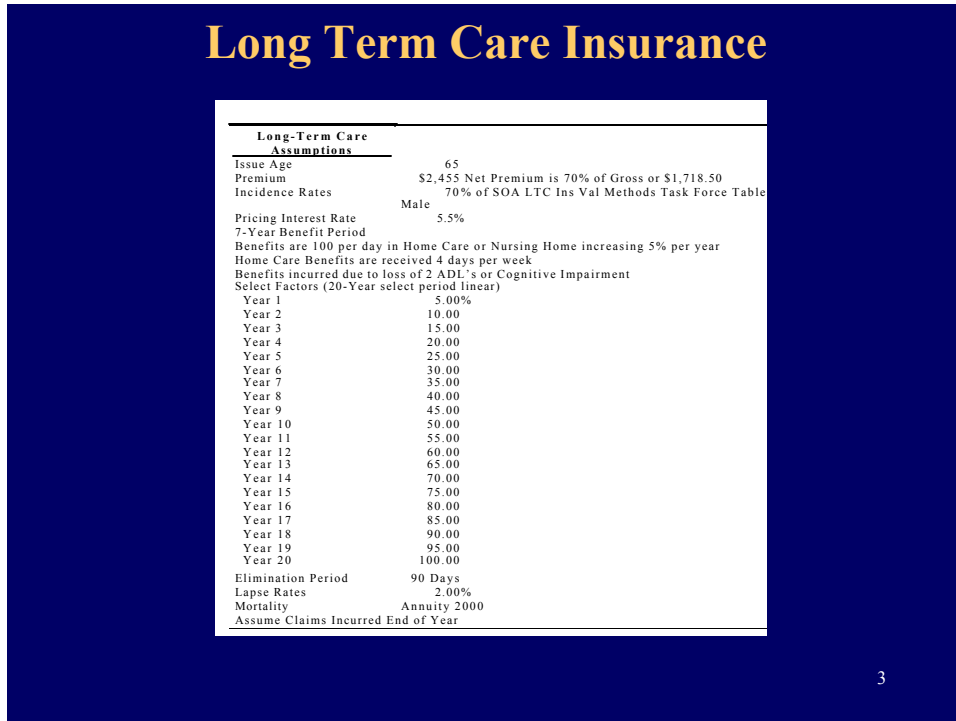
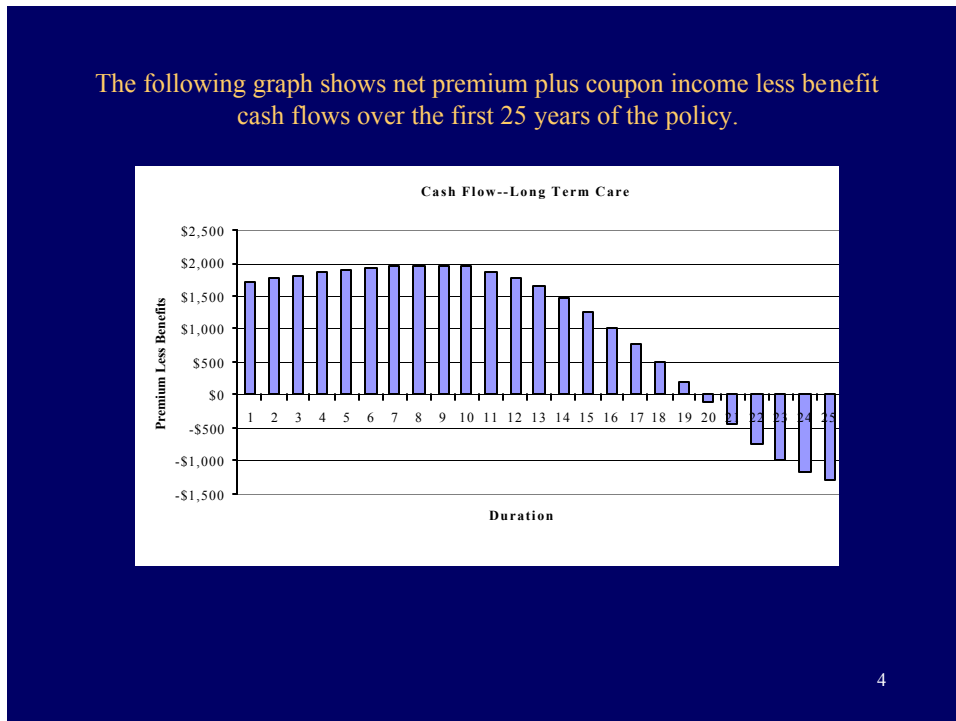


Figure 9





## Raising Earnings On LTCI Through Asset/Liability Management 17

A key point to consider is that each time I receive a premium, I am promising the policyholder I can invest his or her cash at 5.5 percent. I am agreeing today that I will sell you, the policyholder, a bond yielding 5.5 percent between now and the next 20 years, every time you pay me a premium, which is typically referred to as a call option. Now we see in Figure 10 what happens to our assets over the 25-year period as we invest at the 5.5 percent. As long as our total assets accumulate at or above the line, we're okay. If they're below the line, we have a problem. What happens if I need to earn seven percent? The higher line on Figure 11 shows their assets at seven percent and the lower line shows their assets at 5.5 percent.

Figure 10

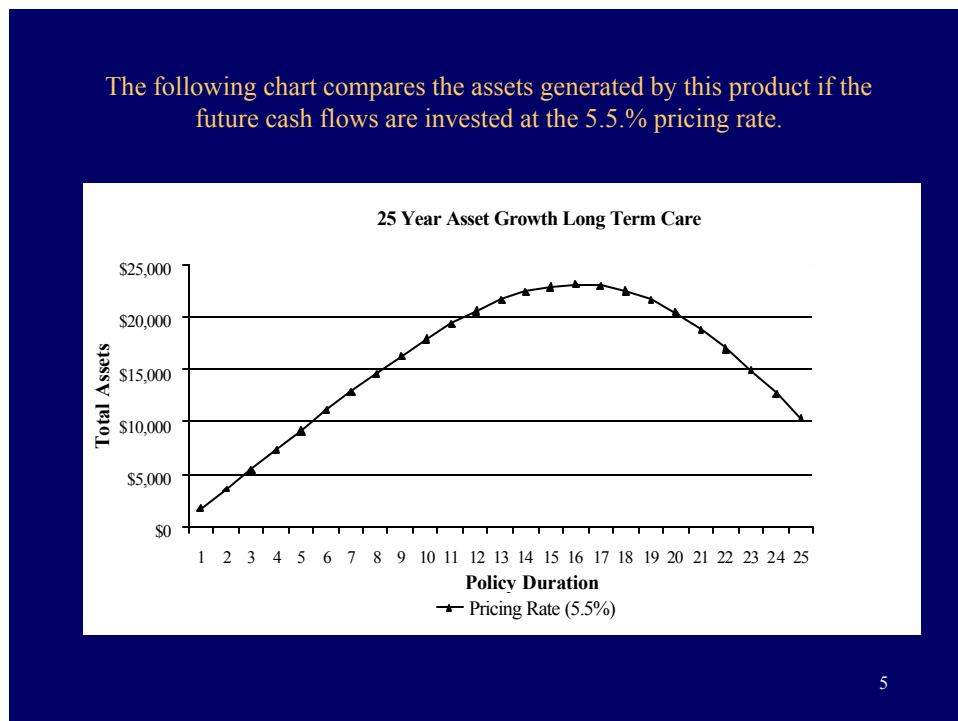
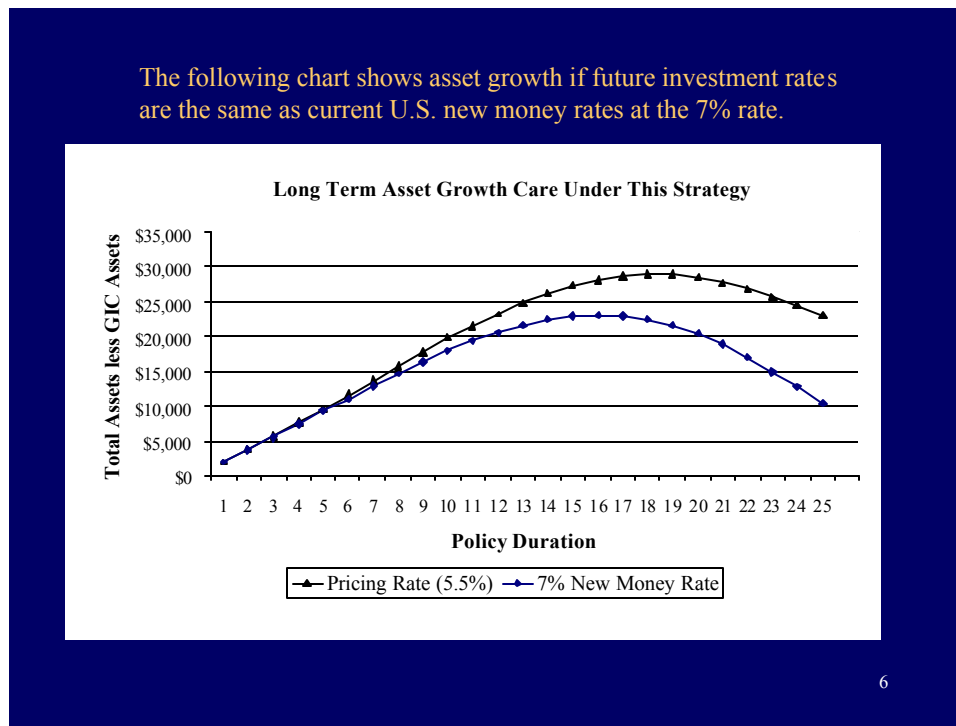


Figure 11



The difference between those lines is the cumulative losses we suffer on this policy due to the fact that we cannot earn the embedded pricing rate. For every policy I sell today at seven percent, I have today a loss in the embedded value of my company. If we discount this difference, we could figure what that number is. I took this to 30 years.

Now we have this risk, and we probably have it embedded in our books. What actions can we take to hedge my inforce business? Can I do some things to hedge new business, which I may or may not price in the rates to prevent this from happening if rates continue to decline? There are still strategies we can take. Let's go over some of the strategies we've heard in the past and some we've worked with companies on. Let's go over the most common strategy. I'm going to assume I'll file for a rate increase. How many of you, if you recommended a rate increase today, could get your management to accept your recommendation? How many believe that you're responsible to wait because rates will eventually rise? Do you believe you know the time will come when rates have gone below your pricing level and will stay there forever?

Do you know of a company that's filed for a rate increase in the past two years because it doesn't think it can get seven percent anymore, even though the implied forwards as well as the mean reversion shows the company that it can? If you could correctly decipher the point where interest rates fell below pricing and stayed there, and if you could convince your management of such, how many of you believe

## **Raising Earnings On LTCI Through Asset/Liability Management 19**

regulators would grant you a rate increase in a timely manner? Especially given that the only reason you need the rate increase is you failed to hedge the risk, and given the requirements of the rate stabilization, which you look at the loss ratio computed at the statutory valuation rate, which would assume you priced at 4.5 percent.

I think if you honestly go through these answers, you'll find that that strategy is not viable. Yet on most actuarial opinions, that is the number-one reason actuaries don't need to set up reserves due to cash-flow testing.

Let's just assume my risk is offset. I've got a deferred annuity line, and if rates crawl, I could continue to lower my crediting rate and get this huge capital gain. Doesn't that offset my risk of rates declining on my long-term care, particularly since I do have an aggregate duration match portfolio? Here we need to consider the difference between an interest rate fluctuation, which this strategy will protect you against, and one of a long-term cyclical decline in interest rates or simply a reversion to a new paradigm of what the mean rate is. Over time, those annuity assets are going to roll over into lower-yielding assets. You're still going to have these promises to your long-term-care policyholders that you'll invest their premium at seven percent.

Maybe we can look at more effective strategies, now that we've looked at the two most popular ones. These strategies usually involve options. One, you can synthetically create a right for your company to be able to purchase a bond at today's forward rates, if you have a right to purchase a bond and you don't mind being in a situation in which you're promising to sell a bond. The second strategy is that we can create a structure that allows me to receive all my cash up front and I can invest it at today's rates and lock in today's forward rates.

Let's start with offsetting derivatives, which is synthetically creating a call. In one strategy, we're going to assume \$100 million of long-term-care premiums coming due in three years. We're going to enter a three-year, forward-starting interest rate swap with a \$100 million notional, where the insurance company will receive fixed and pay floating. On October 25 of this year, if you had entered this strategy, you would have received 5.89 percent. This means you're entering an agreement in which three years from now you will pay the swap counterparty London Interbank offered rate (LIBOR), whatever it is, and the swap counterparty will pay you 5.89 percent.

What happens three years from now when the cash is received? One simple thing to do is buy a floating-rate asset. If I buy a floating-rate asset, it floats with LIBOR, I pass LIBOR over to my swap counterparty, and I'm going to earn 5.89 percent, plus whatever credit spread that asset gives me. The one problem we have with this strategy is that floating-rate assets tend to be in short supply. You may not want to be limited to only buying floating-rate assets that are available. We need other ways of dealing with this.

## **Raising Earnings On LTCl Through Asset/Liability Management 20**

The second one is simply to unwind the swap, take the capital gain, and then just buy a new asset. Under GAAP, you could actually take that difference and amortize it into income over the life of the asset you're buying and economically, that has the same impact. In situations where you want to either recognize a loss or a gain for tax purposes, this may be a better way to go. The third one is to enter an offsetting agreement and buy a fixed-rate asset.

Here in Figures 12 and 13 we have a few scenarios, so I'll try to walk through them. On the left, we have the first swap I entered three years ago, where I'm receiving the swap fixed rate and paying LIBOR floating. On the right, I enter a swap where I then receive floating and pay fixed. The LIBORs cancel, and I'm receiving the original swap rate and paying the current swap rate. If I buy an asset today, we saw I was yielding the swap rate plus a credit spread over the swap curve. I forward that credit spread over to this swap counterparty, and what I'm left receiving is the swap forward rate plus the credit spread. We can go through this a little more cleanly. Company receives LIBOR from the Swap Counterparty 1 and pays it to Swap Counterparty 2. Company receives a swap forward rate from Counterparty 1 and then pays the swap current rate, receiving the difference of the two, and from the asset you receive the swap current rate plus the credit spread, which nets to the swap forward plus credit spread. So in this case, you would get 5.89 percent plus the credit spread that is available in the market three years from now.

Figure 12

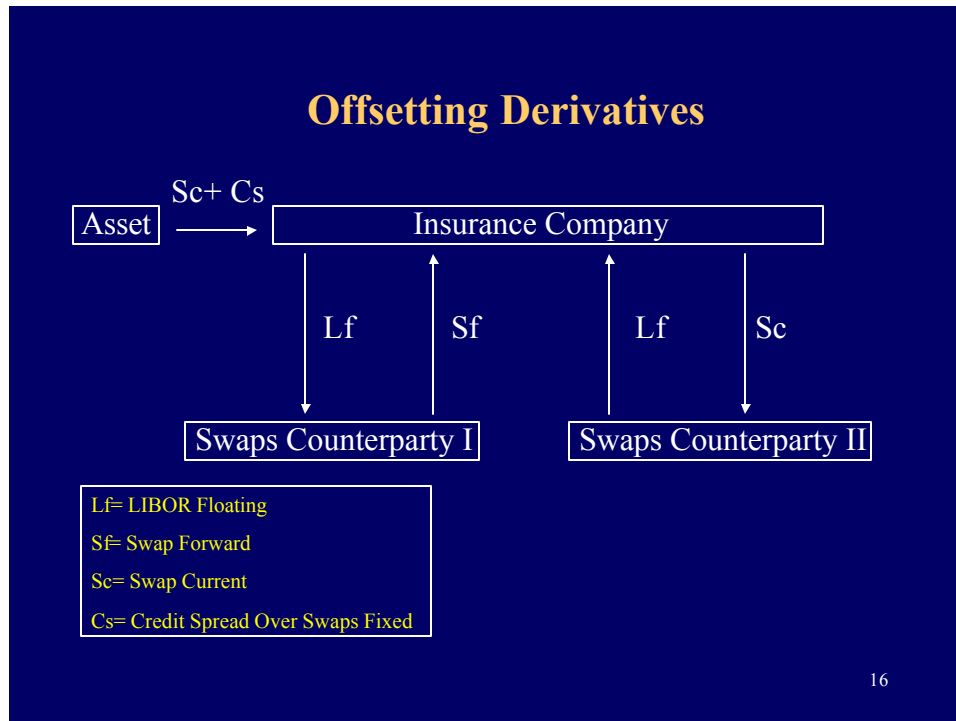
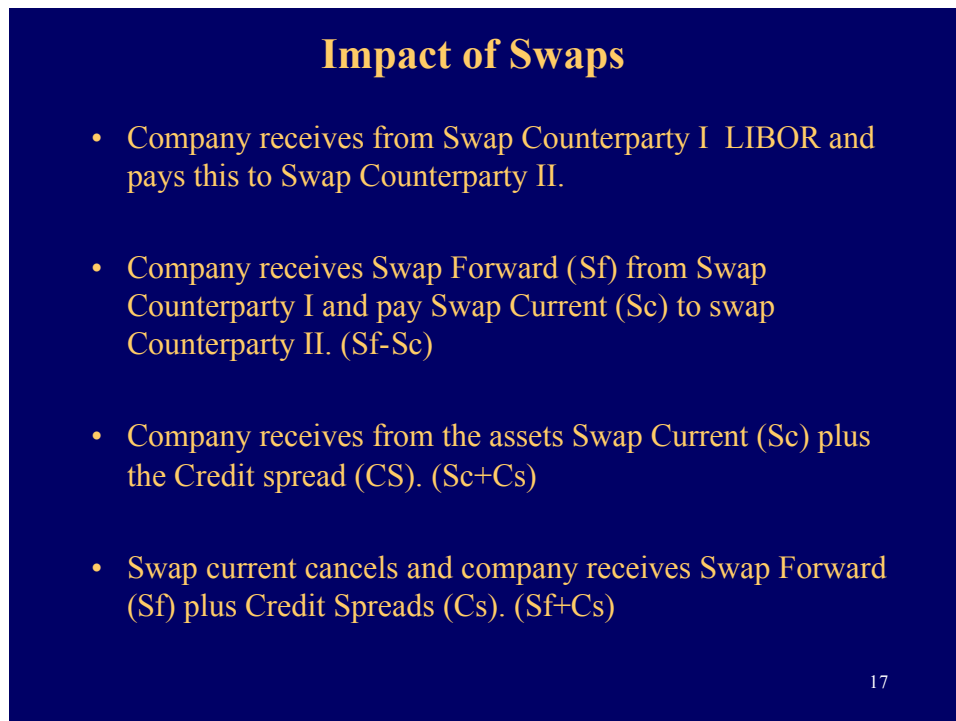


Figure 13



## **Raising Earnings On LTCl Through Asset/Liability Management 22**

The strategy has a number of advantages and disadvantages. It's one of the easiest. It's fairly simple for a company to execute so long as it is creditworthy. Swaps are fairly liquid instruments. There are a lot of banks that would love to sell you swaps. Swaps are available in all durations up to 30 years. So you can fine-tune your asset cash flows to what you need.

However, there are a number of disadvantages. One is that there is a large level of counterparty risk. This is the exposure you have if your counterparty fails. For most counterparties that are collateralized, that's not an issue. You could take the collateral and move the swap somewhere else. The issue you run into is, what if there is a problem in that whole industry?

The second disadvantage is a large number of swaps, which this would generate, could easily result in a company exceeding credit lines. In a deteriorating financial situation, for example, and rapidly rising interest rates, this could impact a company's liquidity at a time when it is being severely tested. The third one is the inability of a company to hedge credit spread. In the example we showed before, the company is ultimately going to earn 5.89 percent plus the credit spread available three years from now. In this case when we refer to credit spread, we're referring to spread over the swap rate, not the way we would traditionally think of it as credit spread over the Treasury curve.

Historically on A bonds, this spread has been about 30 basis points, while today that number is in the neighborhood of 120 to 140 basis points. So, if you were to do the strategy, you would expect in a mean reversion that you're going to gain a 30-basis-point credit spread, versus today, if you could get a strategy that can get you the 120, you have a better shot of getting your crediting rate probably over that seven percent hurdle. Now, of course, credit spread is accompanied with increased credit risk. Last year was one of the worst years ever for investment-grade credit risk. How many people think that the default rate on A bonds was greater than one percent? How many people think it was greater than 50 basis points? How many think it was under 50? In one of the worst years ever for credit losses in investment credit, the A bond default rate was 17 basis points. So, you're getting paid 120 basis points for risk that in a bad year was 17.

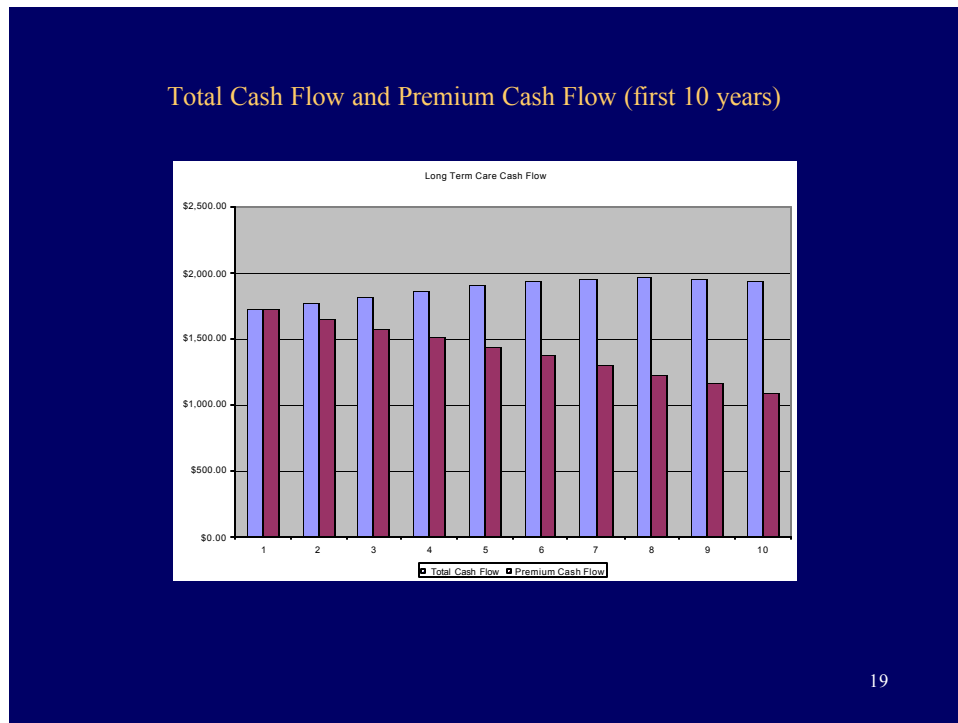
There are three other ways that companies can do the strategy and use credit spread to give them the additional yield they would need to hedge their risk. One is to add a portfolio of credit default swaps to the interest rate swaps. If you sell protection on portfolio bonds, you can then earn the 120 basis points at your 5.89 percent. You can get yourself even net of defaults above that seven percent range, or close to it. The second one is to do a securitization transaction. The third is to do a structured liability transaction, which will allow you to up-front your cash today and invest it at today's forward rates plus credit spread. Of course, many companies today are leery of adding a bet on corporate credit exposure to their balance sheets. As a stand-alone decision this may make sense, but in this transaction, we're starting from the point that you have an interest-rate bet on

## Raising Earnings On LTCI Through Asset/Liability Management 23

your balance sheet that looks like you're going to lose. By adding credit exposure, we are trying to convert that situation from a bet that you're going to lose to one that you're probably going to win.

Let's look at securitization. If you remember the cash-flow chart we showed earlier in Slide 2, Figure 14 shows the cash flows for the first 10 years for the long-term-care policy. The darker lines represent the amount of that cash flow that consists of premiums. Under a securitization transaction, we would develop a model that calculates that premium. The premiums would go into a separate trust, a special purpose vehicle (SPV), and then be sold out to the capital markets. This allows us to receive the bulk of the cash up front where we can then invest it at today's rates. Because these cash flows are short, they tend to be more priced off the short end of the curve, which gives us a yield pickup equivalent to actually investing at the forward rates. Securitization has a number of nice benefits, but there are a number of issues to consider. I know there are companies that actually have done this, this year.

Figure 14



One is that long-term-care policies are lapse-supported policies. If you don't get the lapses you expect, you have to set up additional reserves. I think we've all seen that in the past few years. If you're in a situation where, in addition to needing the cash to set up additional reserve, you've sold the cash, you can exacerbate your problem. A second one is that there are significant costs in modeling, rating agency opinions, and consultant opinions on the adequacy of the cash flow. Since these cash flows can be claimed by a regulator in the event of rehabilitation, the cash

## Raising Earnings On LTCI Through Asset/Liability Management 24

flows will be subordinate to policyholder claims. This results in the bonds typically receiving a lower rating than the claims-paying ability rating of the insurer and, therefore, a higher cost to the company. Also, since the bonds are asset backed, they will tend to trade at a premium relative to earnings-backed bonds. However, knowing those defects, the strategy still is an effective strategy, one that companies are looking at doing and should be part of your arsenal.

The next one I have is called the structured liability. Again, look at our cash flow pattern that we showed earlier on Slide 2. In a structured liability, I'm going to create a product that I can sell into the capital markets whose cash flow is a mirror of this cash flow. The scale isn't right on Figure 15, but in essence what I'm creating is the bottom cash flows of this are exactly equal to the top cash flows of the other one, and the end result is that I have all that cash received up front. As a result, Figure 16 shows my new cash flow. For the next 10 years, except for some residual investment income, I have no investments to make. So, I have my cash up front. I invest it at today's rates. The other advantage is that all my borrowing, or all this liability, is priced on the capital markets based off the yield curve. So I am borrowing short and investing long. As a result, I'll pick up the slope of the yield curve straight to earnings this year and next year and the year after. I know one company that has executed this strategy that made close to \$40 million this year in statutory and GAAP gain from operations.

Figure 15

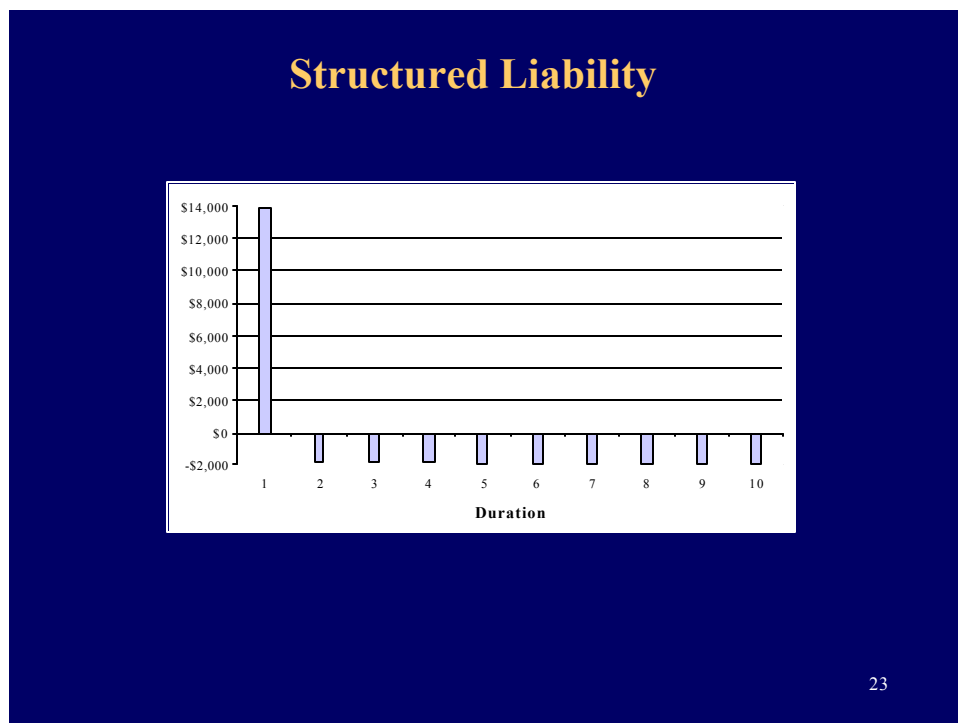
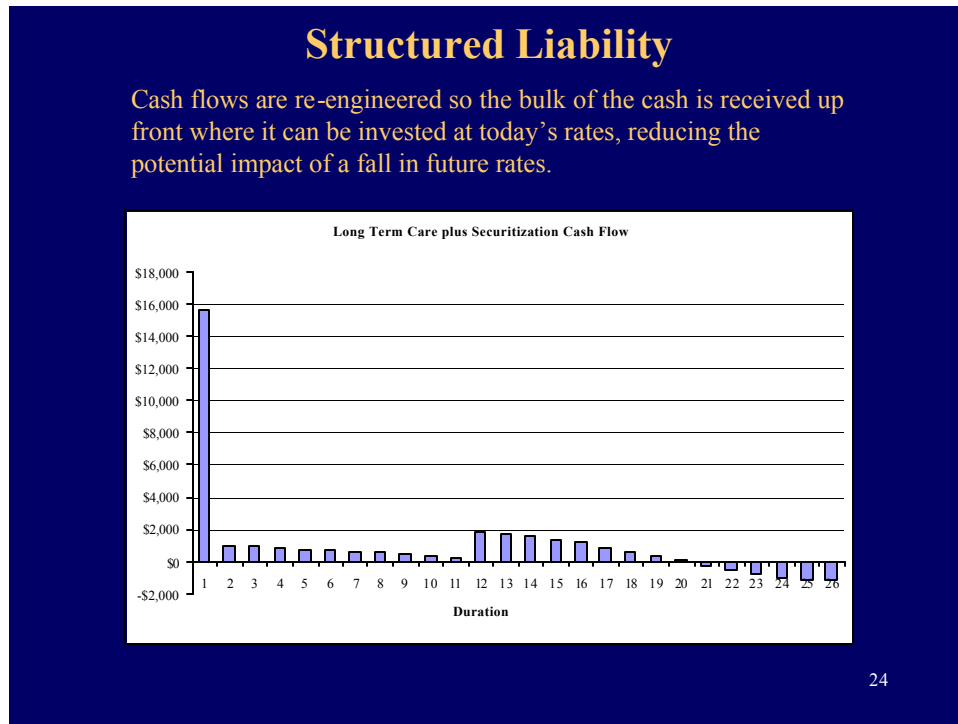


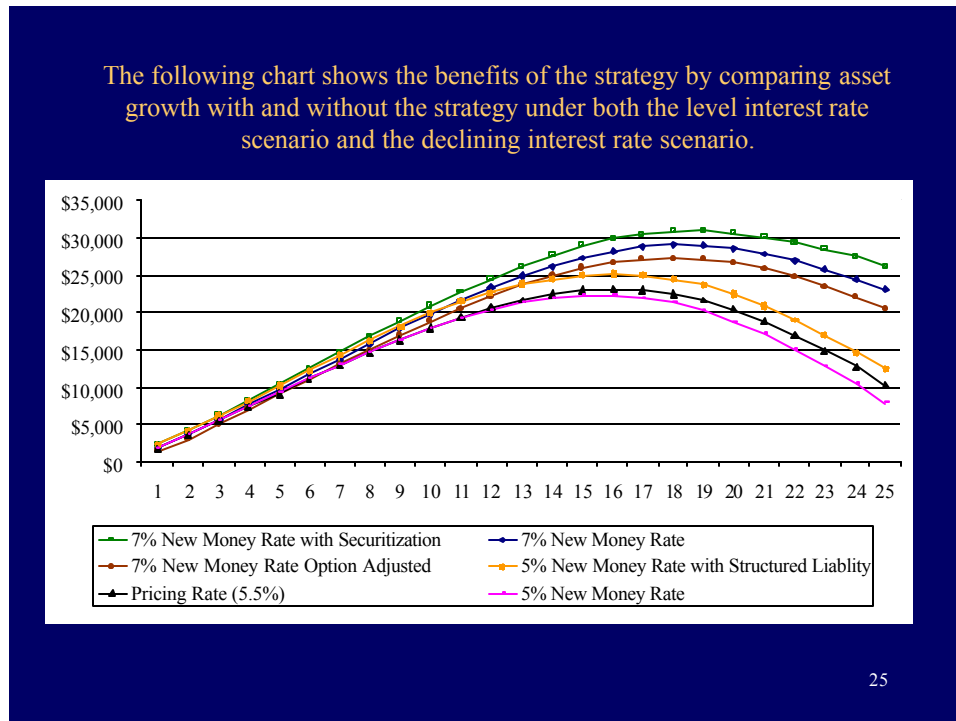


Figure 16



Take another look at our charts (Figure 17). Structured liability is going to reduce our risk of declining interest rates for non-putable liabilities. We are creating a liability that in itself has a profit margin. As a result, we are expecting to increase our profits by selling another product. We increase our assets under management. We minimize any use of derivatives so you don't have any of your FAS 133 conversations with your regulators, with your CFO or with your shareholders. This is the sale of an insurance product. You eliminate most of the "cons" of securitization. It does involve some forward-starting swaps, but it is basically the sale of a product. It has all the advantages of securitization, no leverage impact on your balance sheet and maintains your flexibility for handling any adverse deviations in mortality and persistency.

Figure 17



While there are a number of tools that companies can use to better manage the investment component of long-term care? we presented three here? a good risk-management solution does not depend on one strategy. A robust system should use all strategies in a combination to diversify your sources. If for any particular reason one of these strategies is not effective for that time, you have the other strategies. By using the strategies, you can turn a product that is having a negative impact on embedded value to one that is having a positive impact on embedded value.

**MR. NEWTON:** What you've heard today so far is a better understanding of the problem. To the extent that some of you may not have seen some of the previous presentations, I think we're all at least aware that the possibility exists that we could be in some trouble if we don't try to do something about this problem. The first step in creating a solution that might work here, or even for other parts of your business, is to understand that there is a problem. The second thing you're probably thinking is that you've seen a lot of stuff today already, you don't really understand how you can go forward and it's just too much too soon. I want to back up a second here and think about some ways to take some concrete steps to move forward.

The first concrete step that I found in my own experience, working with Richard and Larry in the past, as well as the company history that we all share together in some way, is to get away from the internal philosophy that I think holds companies back

## **Raising Earnings On LTCI Through Asset/Liability Management 27**

in that they can do it all. You can do it all, but what you can't do is do it all well. We all need to understand that every company has its own particular skill set and its own particular market and some niche. It is worthwhile to think about outsourcing some tasks to people who can do it better, faster and cheaper than we do. The first hurdle to get over is that you really can take some of your businesses apart, outsource some of the functions, not all of them, and put them back together such that the whole is bigger than the sum of the parts. It's a philosophy that you have to get over. Even Richard alluded to it in his experience with insurance companies in the investment area. They're their own worst enemies.

Once you get past that, the second thing is to define what your skill set is. There are certain things that some companies do amazingly well and certain things that those same companies probably do very poorly. If you've worked in an insurance company for any number of years, you probably know what those things are. It's not a mystery. There are certain things where it's common knowledge that you could do it better if somebody else did it.

Once you define your skill set, the third step is to get rid of the things that you can't do as well, for whatever reason. Maybe you don't have the skill set. Maybe you don't have the internal tools or the systems to do it. If not, then that's a good candidate for doing something else. Richard and Larry have both posed some possible solutions to you today, but the first thing we need to do is step back a second, understand the problem and define the best way to move forward.

I'm going to talk just for a few minutes on securitization. Session 11D, "Reinsurance or Other Financial Instruments: The Pros and Cons," covered the benefits of securitization versus reinsurance. If you didn't go to that session, it was an excellent one, although at a fairly detailed level. You had to know something about what they were talking about before you could understand what they were talking about. If you're interested in reinsurance or securitization or some of these possible solutions, I would recommend that you go back and get the tapes for that or at least look at the slides on the *Record*.

In long-term care, we're familiar with the risks. There's a morbidity risk, a persistency risk and the risk that expenses won't be what you thought.

Investment income is something that we're sharing with you today. Then there are other risks. This is sort of the C-4 component of risk-based capital (RBC), and we're going to put those off to the side because they're oddball kinds of things.

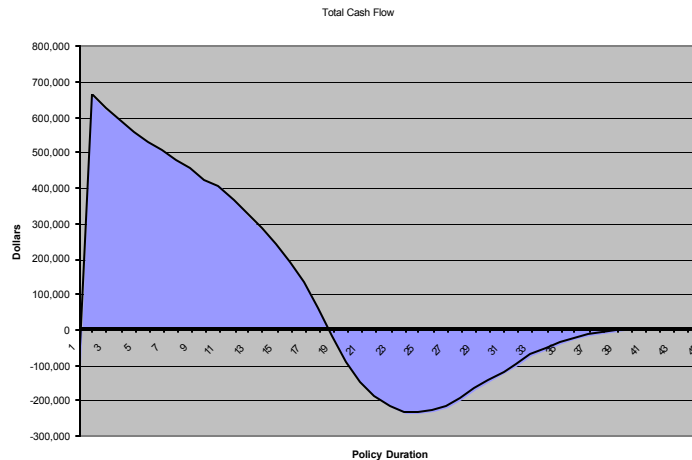
But let's rethink these risks. Essentially, long-term care is a transfer of risk and a financing of that risk. What you have is a risk that everyone faces. Some people are choosing to transfer it to an insurance company or some other entity. But involved in that transfer, in that big transfer of risk, is essentially a financing mechanism, and that has to do with a regular series of premium payments, whether it's level for life or 10-pay or pay to 65. People are essentially financing that risk over time. I

look at the long-term-care risks of insurance, and I separate them into risks like persistency, expenses, investment? things that are economic in nature? as opposed to things that are sickness or health related, and more insurance in nature.

Figure 18 is roughly the same graph that Larry had before, just a slightly different portrayal of it with slightly different assumptions. In the first year, there's a tiny slice in the corner that has to do with acquisition expenses. Then in the second year, you're getting all kinds of net premium that you need to invest. The early cash flows are challenging from an asset/liability management perspective. Those early, positive cash flows really drive the problem in asset/liability management. The later cash flows are more morbidity related because there are not many claims in the first 10, maybe even 15 years, but as you get toward the late 70s and 80s and even 90s in age, you start to get into the morbidity risk, and the net investable cash starts to tail off and go negative.

Figure 18

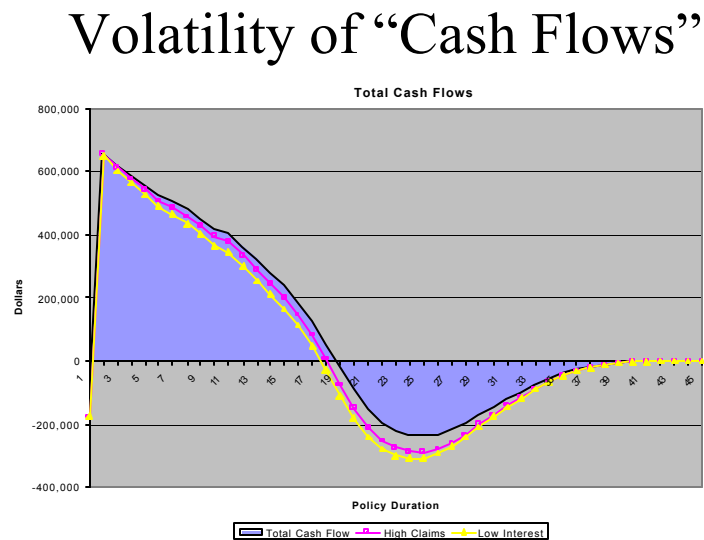
### LTCI as “Cash Flows”



The point of Figure 19 is not that it's positive and then negative. The point of this slide is that we're rethinking the long-term-care policy and thinking of it more as a set of cash flows than an insurance kind of risk. That set of cash flows is volatile in nature because things happen to it that change the size of the cash flows and the timing of cash flows. Some of the things that could happen are that claims would be worse than expected and that interest rates could be less than expected. If you think about claims as an insurance kind of risk, that's one thing that could happen to a defined set of cash flows, and the same with interest rate changes. That set of cash flows that you projected could be different based on what interest rates are,

but in either case, what we're really looking at is a defined set of cash flows that can be volatile or change in nature.

Figure 19

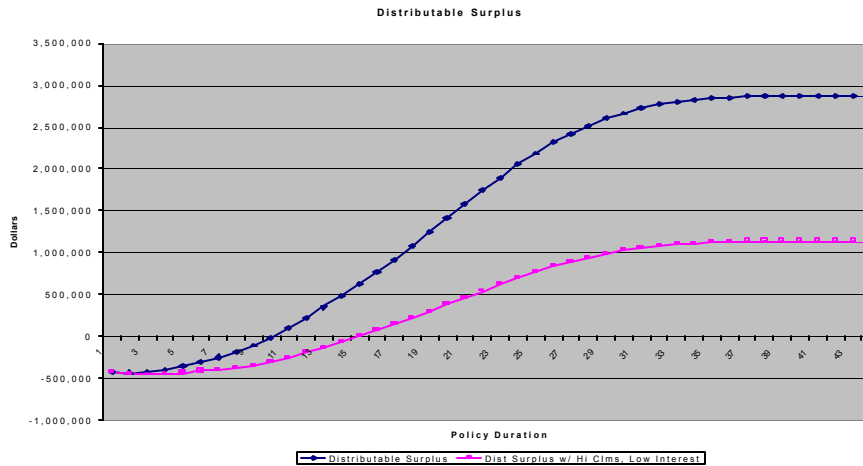


If you look at these curves, you can see that the blue line doesn't look that different than the pink line or the yellow line, but over time this adds up.

Figure 20 shows the surplus position of this defined set of cash flows. If everything works out as expected, you'll be up at the top line. If bad things happen, like claims are worse and investments are worse, you're going to be down at the lower line. What seems to be not very different from a year-to-year or even a quarter-to-quarter expected set of cash flows can translate over the long term into greatly different sets of values for surplus.

Figure 20

## Volatility of Surplus



Thinking about long-term care as a set of cash flows and not necessarily as an insurance product, what we have is a possibility that you could securitize this cash flow. Let's talk about securitization. First of all, what is it? Securitization is the sale of a defined set of cash flows, and I use the term "sale" loosely. A common example is your mortgage, which you probably write through a broker, who then sells it to the secondary markets. That's a securitization of your mortgage. Credit card receivables are also commonly sold off. You put charges on your credit card. Those receivables get sold off to somebody else who buys the right to that set of cash flows.

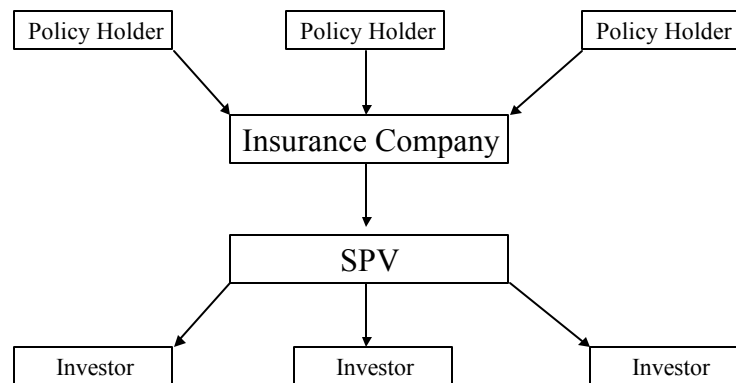
Everything in long-term care can be looked at as a set of cash flows and not as an insurance risk. If that's true for mortgages and for credit card receivables, then it's true for almost any set of cash flows. The difference is the volatility? the possibility for variation? in those sets of cash flows. In the past, insurance companies have always thought that we needed to do it all. We need to transfer that risk to us. We need to finance it. We need to service it. Whatever it is, we always think we're the best at doing it, which is actually not true. For cash flows, the same principle applies. Maybe the insurance company is not necessarily the best place to own the rights to those cash flows, especially if you look at cash flows as a financing problem and not necessarily as an insurance problem.

When I'm using the term "securitization" today, it means that I'm looking at an insurance product? in this particular instance, long-term care? and I'm understanding it as a set of cash flows that I have many options to do with as I like. Figure 21 shows the simplest possible scenario. "If anything could be said

about securitization, it's that securitization is a complex transaction. I'm using the term loosely today. There are many structures, even simple reinsurance structures, that can basically do the same thing. Policyholders transfer risk to the insurance company for a premium, a financed set of cash flows. The insurance company takes those and sends them off to an SPV. Essentially the insurance company is taking this defined set of cash flows and putting it over into a special purpose vehicle, which will then tranche those up. Almost any set of cash flows can be tranced, and they can be tranced in a million different ways. We're thinking of an insurance product as a set of cash flows that can be moved somewhere else off the balance sheet, away from the insurance company, and then sold to the capital markets? the investors at the bottom.

Figure 21

## How Is It Accomplished?



Why would you ever do that? What insurance companies have to do, basically, when they take on this risk transfer and this financing mechanism, is put capital behind any product that they sell. The problem is that the ROE standards, or the internal hurdle rates that you have, are basically for equity-like cash flow instruments. So internal capital is extremely expensive, even if it's only 12 percent, which is about the minimum that companies have today for hurdle rates.

If we could take those cash flows, and instead of asking for capital from only one internal source? the single source that insurance companies currently go to when they want to launch a new product? say that we're not interested in your capital, that what we really want is cheaper capital, and if somebody else is willing to give it to us, then we'll take that. In securitization, in the concept of these cash flows, we're going to divide the rights to that cash flow into tranches. The more secure the

cash flow in that tranche, the lower the cost of capital. Overall what we can do is change the cost of our capital on the business, or at least have a choice in who provides the capital and how much it costs us, such that we can change our risk picture internally.

I put together a simple example on Figure 22 of how this works. Here's how to think about it. We're going to take a set of defined cash flows from a long-term-care policy, similar to the characteristics and assumptions that Larry used in his pricing, except at a little higher interest rate, and we're going to say that we need a certain amount of capital to back that transaction. In this case, we're going to get \$160 million from selling the first set of rights to the cash flows that come off of that. The first set of profits that come off of this business is going to go to Tranche 1? that's that first \$160 million. It's paid off in a very short period of time. Essentially we're creating a tranche that has the first right to all profits, the first right to all cash flows that come off of that. It's going to be quickly repaid. Because it's a very short-term instrument? five years or so and it'll be all be paid off? and it has the highest possible security of all my cash flows, the cost of capital is going to be really low for that particular tranche.

Figure 22

## Example

Policy Yr	Net Cash Collected	Distributable Earnings	Without Securitization			W/ Securitization		
			Surplus b/f Debt Costs	15.9% Bond Repayments	Beginning of Year Bond 1 Bond 2	Single ROE(IRR)	36.0% Equity Tranche Equity Tranche Income Rights	
1	-168,598	-420,929	0	0	160,000	160,000	100,929	-100,929
5	386,473	64,005	68,713	160,000	160,000	160,000	100,929	-95,995
10	107,589	83,255	292,644	0	0	0	100,929	83,255
15	-151,738	75,462	749,492	0	0	0	100,929	75,462
20	-469,707	66,458	1,103,644	0	0	0	100,929	66,458
25	-476,149	47,046	1,382,012	0	0	0	100,929	47,046
30	-239,128	27,040	1,557,793	0	0	0	100,929	27,040
35	-61,445	11,165	1,644,514	0	0	0	100,929	11,165
40	-6,092	2,194	1,669,897	0	0	0	100,929	2,194
45	-59	86	1,672,763	0	0	0	100,929	86

Then I'm going to take another tranche, and I'm going to say that after I pay off that one, the secondary set of people get paid off next, and there's a certain interest rate associated with that. Typically you probably wouldn't get AAA because when you issue tranches, you're usually one or two notches below whatever your company's credit rating is. In this example, we're talking about a AA instrument for Tranche 1, a BAA instrument for Tranche 2, and then there's an equity tranche. So



we have three tranches: first rights, second rights and then the equity tranche gets whatever is left over from this.

At the top of Figure 22, you see this is priced at 15.9 percent ROE. If my first bond is a AA instrument, then I'm going to be down in the sixes maybe, maybe even the fives. So I'm trading a defined set of cash flows, a very secure set of cash flows. I'm earning 15.9, and I'm paying six. In my second set of cash flows, my second tranche, I'm going to be earning 15.9, and I'm going to pay eight. Now what happens, since you're earning 15.9 and paying those lesser rates, the profits get reallocated to the equity tranche. So the equity tranche is financially leveraging up its return, and instead of earning 15.9 on the whole thing, I'm giving six away to some people, I'm giving eight away to other people and everybody else gets, in this example, 36.

Now it's not so important to understand that 15.9 gets translated into 36 because in real life that's not going to happen. There's not that much leverage available. It's fairly risky stuff. This particular example has \$160 million in Tranche 1 and Tranche 2. Typically they would require more equity be poured into this SPV to get Tranche 1 at a really low rate. It's more important to understand that by looking at long-term care as a set of cash flows and being able to deal with it that way, you can find parties whose capital is cheaper in some way because you're changing the nature of the internal cash flows. You can choose your position. If you want to be in the long-term-care business or you are in it, but you don't want to be paying venture capital-like returns to your own company for the privilege of doing so, or if a company is not in the business and would like to be but is scared of the risk, what you need to take away is that the possibility now exists for us to think about changing that risk picture internally.

You can be in the long-term-care business and just have a nice AA investment out of it. *You* supply the capital for the first tranche and then sell off the other two. You don't all have to be in this for the whole venture capital rate of return. You can pick the risk profile that you want out of this business, and by securitizing it, you can change the nature of the long-term-care business internally to either increase your risk by taking the equity tranche or by reducing your risk and taking the first or second tranches in this. The possibility now exists to get into the long-term-care business, or stay in it, and change the risk profile of what you're doing and why.

Why think about securitizing? You can reduce the volatility. There are a certain number of strategies that are available to deal with interest rate risk, or any risk, and securitization is just another arrow in your quiver. It can improve the effectiveness of whatever you choose. If you want to leverage up or leverage down, you can do that either way. It's a different kind of risk profile. By looking at capital availability from other sources than internal, you can choose the risk profile that you want and not the one that you thought you might have to have. Securitization is not the panacea. It's hard to do. But as I said before, it doesn't have to be done on Wall Street internally? it doesn't have to be done with that degree of complexity.

You may be able to set it up with a reinsurer who's flexible and willing to work with you. There are some regulatory issues on a true sale, on a true securitization. Those are probably outside the scope of this meeting. Those are my quick remarks on securitization.

**FROM THE FLOOR:** When we talk about the A default rate of 17 basis points, what happens when you hold a A asset and you buy a single asset? It's not going to default at a A. It might, but that's 17 basis points. It usually goes through a downgrade path, going to different states, going to BBB to B to C and then eventually defaults. When we underwrite life policies, perhaps not many healthy people died this year, but that doesn't mean we should think that if we underwrite healthy people now for a life insurance policy, they're not going to eventually die. They might go through various health states before they die.

**MR. RUBIN:** Look at the cumulative default rate on a A portfolio or a BBB portfolio. If you look at Moody's historical data, you find that over 10 years, you're in the neighborhood of one to two defaults on an expected basis on a whole portfolio. If you have a well-diversified portfolio, you're looking at one or two defaults, and even looking at Moody's BAA, you're looking at five percent over 10 years or 40 basis points a year with a standard deviation probably of another 40 basis points. So 120 basis points today is somewhere in the neighborhood of a three-standard-deviation event for credit defaults. Certainly on BAAs, you're getting paid somewhere in the neighborhood of 220 today. So you're getting 100 basis points over the three-standard-deviation default scenario. If you price it as an insurance product, and that was your business, you'd love to be in that business.

**MR. TIMOTHY HALE:** Say I've got \$100 million. I say, "I will pay you LIBOR, and you pay me fixed rate, at five percent." Then I turn around and I say to somebody, "You give me LIBOR, and I'll pay you the fixed rate." Isn't there somewhere here where somebody's winning and somebody's losing, but yet I'm still somehow making money?

**MR. RUBIN:** You are losing if rates rise, because you're going to get 5.89 percent no matter what happens to rates. You win if rates fall. But you don't care if rates rise, if all you have to credit to your policyholder is 5.89.

**MR. HALE:** I'm not necessarily talking about me. I'm talking about the two parties that I've made this deal with.

**MR. RUBIN:** You have one deal where you are receiving fixed—and paying LIBOR. If rates were to fall, the amount you receive is greater than what you pay, so you get the net difference. Yes, the investment bank loses, but it is going to make a deal on the other side to hedge its position. It ultimately becomes a zero-sum game.

## **Raising Earnings On LTCI Through Asset/Liability Management 35**

**MR. HALE:** I see I'm getting LIBOR from one and I'm paying LIBOR for the other. I understand how the LIBOR basically disappears from my point of view as the insurance company or the reinsurer. In every transaction, somebody wins and somebody loses, and where, on the outskirts of everybody hedging everything...

**MR. RUBIN:** The bank is looking is for somebody who wants a different profile than you do. You want to receive fixed. It's trying to find somebody who wants to receive floating because for its risk profile, if the bank receives floating, it may have some other liability that's a floating-rate liability. So it's trying to hedge a different risk.

**MR. HALE:** So everybody wins.

**MR. RUBIN:** Everyone gets what they want.