

# RECORD, Volume 27, No. 3\*

---

Orlando Annual Meeting

October 26–29, 2003

## Session 29PD

### Emerging Developments in XXX Reserves

**Track:** Reinsurance

**Moderator:** MICHAEL S. STEIN

**Panelists:** JAMES W. DALLAS

TODD LARSON†

MICHAEL S. TAHT

*Summary: XXX, UL secondary guarantees and the 2001 CSO Table have all created both difficult problems and interesting topics for the industry. A diverse panel provides perspective on: term products and selection of X-factors; UL secondary guarantees; issues surrounding 2001 CSO; reinsurance issues; onshore versus offshore reinsurance issues; treaty issues; nonconventional solutions; funding trust for special purpose reinsurers; cost, capacity and duration; and managing an offshore affiliate or cell company.*

**MR. MICHAEL S. STEIN:** Our first speaker is going to be Michael Taht. Mike is going to be focusing on issues related to XXX reserves from a direct writer's point of view, particularly dealing with some product issues, as well as emerging regulatory developments. Mike is a principal in the Atlanta office of Tillinghast Towers Perrin, and he's been with the Tillinghast Atlanta office since 1996. His primary area of practice is individual life insurance and annuities, including mortality and underwriting, financial modeling, financial reporting, distribution strategy and product management.

Mike has been active in the U.S. industry providing assistance in the development of the 2001 CSO Table, as well as chairing the SOA's Individual Life Insurance Valuation Mortality Task Force. He also is a member of the Academy's new CSO Table Task Force.

---

\* Copyright © 2004, Society of Actuaries

†Mr. Todd Larson, not a member of the sponsoring organizations, is senior vice president, controller and treasurer at Reinsurance Group of America Inc. in Chesterfield, Mo.

**Note:** The chart(s) referred to in the text can be found at the end of the manuscript.

Prior to joining Tillinghast, Mike worked for North American Life Assurance Company in North York, Canada. His primary focus was the design, pricing and implementation of individual and credit life insurance products. Mike also worked for Royal Life of Canada in Oakville, Canada, where he gained experience in both financial reporting and product development. He received a B.S. in mathematics and economics from the University of Toronto and is a Fellow of the SOA, a Member of the Academy and a Fellow of the CIA.

Our second speaker is going to be Todd Larson. Todd's going to focus on the reinsurer's perspective of XXX reserves and sort of open up some of the issues reinsurers are facing today, particularly related to letters of credit (LOCs), and talk about the ways reinsurers are dealing with them. Todd is senior vice president, controller and treasurer of Reinsurance Group of America, Inc. His responsibilities include coordination of all external reporting, including filings to the SEC, regulatory filings and annual reports to shareholders. He is also responsible for internal management, financial reporting for the company's various operating segments and subsidiaries and the treasury function.

Prior to joining RGA, Todd was an assistant controller at Northwestern Mutual, where his responsibilities primarily included managing a project to adopt GAAP accounting for mutual life insurance companies. Todd started his career with KPMG Peat Marwick in Chicago, where he was a senior manager in the audit practice. Todd received a B.S. from Northern Illinois University and is a certified public accountant. He is a member of the AICPA.

Our third speaker, Jim Dallas, will be talking about what I think is a new and emerging topic related to XXX reserves, and that's related to securitization and accessing capital markets for solutions for dealing with the reserves and capital requirements of XXX. Jim is a consultant with Tillinghast Towers Perrin in its St. Louis office and has nearly 20 years of experience in life insurance and annuity pricing and analysis. The most recent 10 of those years have been in marketing, developing and pricing financially motivated, mortality based reinsurance programs. Jim's a Fellow of the SOA and Member of the AAA.

Prior to joining Tillinghast, Jim was senior vice president, financial markets, for RGA, where he was in charge of developing reinsurance programs in response to changing regulations, taxation, accounting guidelines and life insurance and marketing trends. Prior to RGA, Jim was with ITT Linden where he assessed risk exposure in financial reinsurance transactions. Jim holds a B.S. from the University of Iowa, and he is a co-author of *Life Insurance Products and Finance: Charting a Clear Course*, one of the primary textbooks used in the SOA's courses 5 and 8.

In addition, he is chairperson of the SOA's Reinsurance Section Council and chairperson of the SOA's Committee on Individual Life and Annuity Product Development. He is filling in for Alex Cowley, who couldn't make it, and he's done a very good job of putting this together on short notice.

**MR. MICHAEL S. TAHT:** I'm going to talk about some specific issues related to XXX that are encountered by direct writers of term insurance and universal life (UL) insurance.

Specifically, on the term insurance front, I'm going to talk a bit about X-factor classes—just a quick refresher—and some interesting results of a survey that we did at Tillinghast recently on X-factor classes. Next I'll talk about 2001 CSO, its status, which I'm sure will be covered in other sessions and just a refresher on what we see as the impact of 2001 CSO on term products. Then I'll talk a little bit about a potential emerging issue on reinsurance credit associated with term insurance.

With respect to UL, I'll talk about the impact of Guideline AXXX, and I'm only going to talk about it at a very high level because many of you have been to sessions where there are 90 minutes devoted to AXXX, and that wouldn't leave any time for anyone else up here. Then I'll speak about some developments with respect to shadow fund products.

### **X-factor classes**

Tillinghast recently did a survey of XXX practices. The goal of the survey was to gain insight into what were the factors used in setting X-factor classes. Almost everyone in the survey, 89 percent, had risk class as a factor that was utilized in setting X-factor classes. After that, you have product guarantee period with 56 percent. Gender came up with 33 percent; and, at the bottom, you have issue age at 11 percent.

Now, in setting X-factor classes, there is guidance in Actuarial Standard of Practice (ASOP) 40 and the Practice Notes. ASOP 40 states that the policies that comprise an X-factor class should have similar underwriting or experience characteristics. It's not an "and"; it's an "or." Also in ASOP 40, if you look at the definition of X-factor class, the example that's provided within the definition is one where it's a preferred class and grouping all issue ages together. So, you don't have to split up issue ages in your X-factor classes. That was borne out in our survey.

In terms of the Practice Note, the guidance that's provided is the following: Many actuaries believe that if a shift in the distribution of business would require a material change in X-factor, the classification used for that X-factor would not be appropriate. So that's some more guidance. You can see that, in setting X-factor classes, really risk class is the primary determinant. Some of these other ones come into play but may have less impact.

### **Further Observations**

Some other things that we observed in the survey: X-factor classes were typically developed internally, and the X-factors were calculated internally. Guidance would be received from a reinsurer when guidance was sought. And in setting X-factor

classes, there's typically a balance between compliance with the regulation, consistency with experience, ease of administration and minimization of deficiency reserves. We don't particularly want to have deficiency reserves on these products.

We also observed that in testing X-factor classes after they were developed, typically Monte Carlo analysis was utilized. A few respondents indicated that they utilized the Panjer method. One question that we asked was whether any of the participants had received any feedback or input from state insurance regulators on the X-factors that they had submitted in the X-factor certification. This survey was conducted about a year ago, so maybe this has changed; but at that time, none of the participants had received any sort of feedback from state insurance regulators with respect to X-factor classes and X-factor certification.

### **Example**

What could this mean from a product standpoint? We just did a very simple example, a 20-year term, looking at a male preferred nonsmoker at four issue ages—25, 35, 45, and 55—and did a pretty simple calculation of X-factors (Chart 1). We basically looked at the maximum of the net present value of expected mortality over the net present value of 80 CSO, utilizing 19-year select factors. We looked at that net present value, set the X-factors and did it on an age-banded basis. We came up with a single X-factor for all the ages. Then we looked at it in terms of an X-factor that was calculated separately for issue ages 25, 35, 45 and 55. As expected, there is some skewness.

At age 55, you see a reduction on that basis. I think some of that has to do with maybe the discontinuity at attained age 70 in 80 CSO in terms of coming up with an appropriate X-factor. But in terms of what this could mean for pricing, if you have a concern about deficiency reserves at issue age 55 or issue age 45, using an age-banded approach could work to reduce those deficiency reserves.

### **2001 CSO Adoption**

The next topic in the smorgasbord of XXX, from a direct writer's perspective, is 2001 CSO. 2001 CSO was adopted by the NAIC in December 2002, and states have begun adopting the table. As of October 24, according to Van Elsen Consulting, there are still only four states that have adopted the table. They are Texas, Oklahoma, Utah, and Ohio. There are 17 other states that have indicated that they will adopt the table as of January 1, 2004 if the adoption hasn't happened. According to Van Elsen's survey, another two are planning on adopting it during 2004.

This is a topic that I've been involved with since its infancy, and it's interesting to see that now companies have an opportunity to price with the table, as opposed to hypothetically discussing how they are going to deal with 2001 CSO.

**State-by-State Adoption**

There are some recent changes to the information shown in the following survey results. New York has now indicated that they're planning to adopt as of January 1, 2005. Illinois has changed from adopting as of January 1, 2004 to adopting in the first half of 2004. North Carolina has gone from adopting January 1, 2004 to indicating that they're going to adopt effective January 1, 2005.

**2001 CSO Update — \*Survey in Progress\***

No Position Reported (8 States and DC)

Connecticut, Missouri, Rhode Island, West Virginia, District of Columbia, Montana, South Dakota, Georgia, New York

States with No Current Plans to Adopt (2 States)

Mississippi, Wyoming

States Considering Adoption (10 States)

Alabama, Hawaii (1/1/05), Nevada (1/1/06), Vermont, Alaska, Idaho, South Carolina (1/1/05), Virginia, Delaware, Michigan

States Planning to Adopt (21 States)

Arizona (1/1/04), Iowa (1/1/04), Minnesota (1/1/04), North Dakota (1/1/04), Arkansas (1/1/04), Kansas (1/1/04), Nebraska (1/1/04), Oregon (1/1/04), California (1/1/04), Kentucky (1/1/05 or 06), New Hampshire (?), Pennsylvania (1/1/04), Colorado (1/01/04), Louisiana (1/1/05), New Jersey (??/04), Tennessee (1/1/04), Florida (?), Maine (?), New Mexico (1/1/04), Washington (1/1/04), Illinois (1/1/04), Maryland (1/1/04), North Carolina (1/1/04), Wisconsin (?), Indiana (1/1/04), Massachusetts (1/1/04)

States Adopted - (Effective) (4 States)

Ohio (1/1/04), Oklahoma (7/14/03), Texas (5/1/03), Utah (6/13/03)

*Source: www.veconsulting.com September 18, 2003*

Now, the one thing that's important with respect to number of states—and it's not necessarily specifically relevant to term, but it's an important issue with respect to 2001 CSO—is that we're getting, based on this information, very close to 26 states. Once it becomes adopted in 26 states, it becomes the prevailing table, and the countdown comes on in terms of use of the table for tax purposes. So that's something to keep a watch on.

Now, when you get back to a term focus and the impact of 2001 CSO, one company, USAA, issued a number of press releases and got a fair amount of press regarding the fact that they have introduced a term insurance product based on the 2001 CSO Table. They did this in May, and they took advantage of the fact that Texas adopted it with a mid-year adoption date.

**Special Considerations**

There are some considerations in terms of making use of a 2001 CSO adoption: One, what are your product filing considerations? I think with respect to Texas, USAA was able to give an update and didn't have to go through a whole new filing process.

Second, because of the fact that they've take advantage of it, and they're selling products that were priced on a 2001 CSO basis and are going to be valued on a 2001 CSO basis in states that have not adopted 2001 CSO, they're now in the position where they have to maintain two sets of statutory statements. Given the fact that your valuation requirements are tied to the policy issue, they've committed to this from this time onward. So it's something you can take advantage of, but you have extra filing requirements that come along with it.

**Benefits to Term Products?**

One thing to consider is whether there a significant benefit to utilizing 2001 CSO in pricing term products. At Tillinghast, we've done some analysis on this. What we have in Chart 2 is change in profit margin using a 7 percent discount rate. We've assumed that the product is 90 percent reinsured.

When we look at the term market, we see heavy utilization of coinsurance. That, in effect, moderates the impact of 2001 CSO for the direct writer.

What we've assumed here is that the benefit of 2001 CSO is really a reduction in the LOC cost that the reinsurer is incurring. We've passed that through. There's a benefit to going to 2001 CSO from a profit margin standpoint, but it may not be as dramatic when you look at it factoring in reinsurance as if you looked at it on a direct standpoint.

You will notice that there are a few instances where profit margin is actually reduced moving to 2001 CSO. That's because at certain ages for female smokers, the mortality in 2001 CSO is actually higher than 80 CSO. That's one of the nuances of the table that you should be aware of.

At the June Life and Health Actuarial Task Force meeting there was a discussion regarding reinsurance credits, and this could impact term insurance.

The following example was provided by Sheldon Summers: He said, "Where there's an annual reinsurance premium and a monthly direct premium, the reserve credit taken for reinsurance might exceed the reserves set up by the reinsurer." That was basically thrown out for discussion. In the discussion that followed there was some general agreement that this was not appropriate. However, if you think about term insurance reserves based on mid-terminal with unearned premium, if you have a monthly direct premium and probably have an annual reinsurance premium, this could be a very common occurrence.

So it will be interesting to see how it plays out. I know that the Academy has set up a group to look at a practice note on reserve credits for reinsurance in general. I know that Jim Dallas is chairing that task force. So it'll be interesting to see how this develops and if it develops into something more; but it is an issue that is only potential at this point.

## **UL**

Now, jumping to UL, Guideline AXXX was adopted effective January 2003 for UL. It can have a material impact on UL reserves for products with secondary guarantees (Chart 3). This example is looking at a portfolio of UL products, some with a level premium guarantee to age 100, others with a shadow fund guarantee but assuming a limited pay. This is really just intended to be illustrative of the impact of AXXX; but as you can see in this case, it is significant.

We attempted to estimate the impact of these excess reserves to direct writers or their reinsurers. Based on our quick-and-dirty analysis, ultimate AXXX reserves for one year's worth of issues may range from \$3 billion to \$9 billion, and that's substantial.

Now, we determined that utilizing \$3 billion of projected UL periodic premiums sold in 2003, and that includes about 10 percent excess premium. That's a little higher than what was sold in 2002. We broadly estimated that UL no-lapse accounts for 30 percent to 50 percent of total UL premium and then estimated on top of that that the ultimate AXXX reserve would be three to six times the periodic premium. Usually that peaks at duration 15.

Now, all this can vary greatly based on product design, and how much premium we get in; but it really showed that there's a significant potential exposure out there for the industry in terms of excess AXXX reserves. As companies look at AXXX and develop product designs that minimize AXXX reserves, this number should come down.

Company reaction to AXXX has varied substantially. We've seen some companies withdraw no-lapse guarantees for new business, and that's a pretty drastic move; shortening of guarantee periods; and increases in target premiums. Some companies have just said that they need to stay in this market, and they'll accept lower returns. There have been some design modifications that look to lower AXXX reserves.

I think what we'll get to next as a potential is reinsurance solutions, but to my knowledge reinsurance solutions have not been that widely available for this product. So it remains to be seen how the market will play out. It will continue to evolve in terms of the reaction to AXXX because of the significant strain that's associated with it.

**MR. TODD LARSON:** I'm going to give the corporate treasury area's point of view on what XXX and some of the other emerging or new actuarial standards are creating in terms of a financing need within an insurance company. Although I work for a reinsurance company, really whatever I talk about applies both to direct writers and to reinsurers. It's all interchangeable.

During this segment we'll discuss LOCs, the current market for LOCs, why the levels of capacity of LOCs are beginning to diminish and why that is beginning to drive some other activity out in the marketplace to create alternatives for LOCs.

I can assure you, being within a corporate treasury function, the XXX regulatory needs in terms of the level of reserves get a lot of attention day to day regarding the capital required to support this business. From a corporate treasury view, we have three main clients that we need to keep happy:

- There are the regulators. We need to make sure we have adequate regulatory capital so that we can stay open to do business.
- There are the rating agencies that we need to keep happy, because if they're not comfortable with the capital levels, we're not going to maintain ratings in order to sell policies to our customers.
- Last, if you're a public company, you have to be concerned about your stockholders, because if you want to continue to support your growth with new capital, you need to be able to raise that capital in the marketplace.

All three of these are very interested in the capital structure of the company and how you finance your business. Some also have conflicting priorities. The rating agencies and the regulators are more concerned with the total amount of capital that you have and that it's sufficient to meet your claims-paying obligations, so they want a very conservative level of capital. Your stockholders, if you're a public company, want you to very efficiently use that capital that you have so that they achieve as high a return on those funds as possible.

### Forms of Capital

**Traditional.** There are the traditional forms of capital, which are earnings you are generating from your business that are added to your capital base. There's your true equity, which is the common stock that you've issued or capital that's been contributed by your owners. There's traditional debt. And then there are hybrids, like convertible stocks, trust preferreds and anything else that the investment bankers can dream up as they go about their day-to-day activities.

Other forms of capital can include reinsurance, which can be the traditional risk transfer-type reinsurance, where you want to share the mortality risk of your business. Along with that come some capital benefits on the statutory side. There's

financial reinsurance, which is more concerned with helping manage your capital base versus truly transferring the mortality risk of your business. In doing so, there are also onshore and offshore reinsurance decisions that need to be made, whether you do business with onshore reinsurers or offshore reinsurers. That then brings into consideration various types of regulatory arbitrage that can be considered with different regulatory requirements in different jurisdictions.

In doing some reinsurance, whether you would do it yourself as a direct writer or through a professional reinsurer, there could be holding company guarantees involved if you have need for LOCs or to support an offshore company that's been established. It's not quite as large or rated like the main companies in the group.

**Structured Financing.** Probably what are most popular are the securitizations that are beginning to emerge.

So from the corporate treasury view, we have a decision matrix that we need to work through. Again, we need to make sure we have adequate regulatory capital; we need to make sure that the rating agencies are comfortable with our level of capital, and we need to make sure our investors are satisfied with our level and deployment of capital.

### **Onshore, Offshore**

Do we keep the business onshore, or do we effectively reinsure it offshore with some type of financing security element like LOCs? All this needs to be done within a capital mix framework that the corporate treasury and your company are comfortable with, that you are managing all these different concerns.

With onshore reinsurance there's most likely a higher capital requirement to support the business as it stays onshore, which probably means a higher reinsurance cost from a direct writer's perspective and a reinsurer's ability to provide that capacity. But there are fewer issues related to the ability to take reinsurance credits, because if the onshore company's licensed in your jurisdiction, then you don't have any issues about taking that reserve credit on your Blue Book. However, that does not eliminate the counterparty risk issues of dealing with a company onshore.

Offshore usually will allow a more rational capital approach to be deployed, which probably means a better pricing in the reinsurance treaty. However, it does introduce a whole line of reinsurance credit issues because the offshore company is considered an unauthorized reinsurer. Now the reinsurer needs to provide some form of collateral.

### **Unauthorized Reinsurance**

This is where a direct writer or a reinsurance company reinsures business to a company that is not licensed in the ceding company's state of domicile. For example, a Florida company could reinsure business to a company that's licensed in

all 49 other states but not licensed in Florida, and they would be considered an unauthorized reinsurer.

Likewise, if they cede business to a company that's not domiciled in the United States, that's not licensed in the various states, the reinsurer could be a AAA-rated company, a very high quality-rated company, but still they'd be considered an unauthorized reinsurer, which means that some form of security needs to be provided in the reinsurance transaction in order for the ceding company to take reinsurance credit for that transaction.

To establish the appropriate types of security when dealing with an unauthorized reinsurance company, the ceding company simply can withhold funds from the reinsurer and take credit for that as collateral or security to support the reserve credit. Alternatively, the reinsurer can provide a qualifying LOC, or the reinsurer can post acceptable assets in a specific trust with the ceding company as the beneficiary.

### **LOCs**

LOCs, to date, are probably the most common forms of security for offshore reinsurance transactions or that support the collateral requirements of reinsurance transactions with unauthorized companies.

Basically there are three parties to an LOC. There's the beneficiary, which is the ceding company. It needs the collateral in order to take reinsurance credit for the transaction that it has entered into with the unauthorized reinsurer. There's the applicant, which is the reinsurer. It's the party that's going to the bank to actually borrow or buy the LOC. It's the party that will be liable for the LOC if it's ever drawn. And then there's the issuing bank, whose creditworthiness is backing that contingent obligation. So if the ceding company needs to draw funds on that LOC, the bank will actually produce the funds and provide them to the ceding company. Then it's the reinsurer's obligation to actually repay the bank for those proceeds that have been drawn.

Banks are in the business of lending money, and they're very concerned about creditworthiness of whomever they're lending money to. If it's a small offshore company that is coming to them and applying for the LOC, most likely the bank is going to want some other credit behind that obligation. So it may ask for the offshore company's parent, if it does have a parent, for some type of a parental or holding company guarantee.

Again the LOC instrument is backed by the creditworthiness of the issuing bank. The NAIC actually has an approved list of banks that are allowed to issue these LOCs.

The actual form of the LOC has four main components: clean, unconditional, irrevocable and evergreen.

"Clean" means all the ceding company or the beneficiary needs to do is bring that instrument to the bank, and, no questions asked, it can draw money on that LOC and put it in its bank account.

"Unconditional" means that no reason needs to be given for that demand. Again, the beneficiary just says, "I want to draw upon my LOC," and the bank needs to release the funds.

"Irrevocable" means that the actual LOC instrument itself can't be modified without both the beneficiary, which is the ceding company, and the reinsurer agreeing to the modifications. This way, the beneficiary of the LOC can't be harmed by some type of amendment that the reinsurer might make to the instrument.

"Evergreen" means that the LOC renews every year unless the issuing bank decides and notifies the beneficiary that it's not going to renew the LOC. I think that's a point that's sometimes misunderstood. When some people hear that it's evergreen, they think it's always going to be there. That's not true. The issuing bank every year has the ability to not renew that LOC if it gives so many days' notice to the beneficiary. These LOCs can go away at times. The protection there is that the beneficiary can actually draw on those funds if it receives notification of non-renewal.

The availability and cost of LOCs is dependent on credit markets and the reinsurer's credit quality. These are viewed as loans or borrowings from a bank perspective, so it depends very much on the creditworthiness of the reinsurer. Also, there's a lot of recent pressure from the banks that provide LOCs to reduce their exposure to LOCs and increase pricing. A few years ago, all the foreign banks that used to play in this market by providing LOCs pulled out of the market. And now a lot of the U.S. banks are rationalizing their use of capital, trying to apply their capital to the highest-returning business, and they're beginning to reduce their capacity.

The banking consolidation that we've seen over the past several years is reducing the overall number of providers of LOCs. Just this morning, it was announced that Bank of America will be acquiring Fleet Bank, both of which have been fairly good providers of LOCs in the past. We'll probably have some reduced capacity in the future, given that acquisition. I'm sure there's more to come.

LOCs are historically low-return products for banks. Believe it or not, banks don't really like to lend money. They like other types of services, such as custody services, investment trading services and cash management. They like businesses that they don't have to support with a lot of capital themselves. So when they look at LOCs out to the insurance/reinsurance industry, they're really treating it as an entire relationship with the party that's going to buy the LOCs. There really needs to be a give and take with whomever your providers are for LOCs, that you have a

very strong relationship with them so that they get an overall satisfactory return on providing the LOCs plus the other business that they might do with your institution.

There is another item that we give a lot of consideration to currently. I think this is also driving some of the newer alternatives or ideas for funding the security requirements for unauthorized reinsurance: XXX needs, as an example, are very long-term commitments or needs. The humpback develops over a period of years and is there for quite some time, whereas the LOC instrument is a one-year-at-a-time funding mechanism. Using LOCs to secure the offshore reinsurance credit is, in a sense, funding a long-term capital need with a short-term instrument. From a treasury point of view, that's something we consider, to make sure that we use them rationally in an overall financial capital mix.

Also, availability can disappear when it's most needed. So if a reinsurer or direct writer that's using its own offshore facility with LOCs to fund reserve credits for XXX runs into credit difficulty, those LOCs may not be there come renewal time.

Another thing that's putting some pressure on the overall capacity for LOCs is that a lot of direct writers now are asking for collateral even for onshore reinsurance transactions, depending on the credit quality of their reinsurer.

### **Various Credit Facilities**

There are various forms of LOC facilities. There are bilateral versus syndicated, guidance limits and multiyear contractual (which is really a subset of syndicated). These are how the banks refer to some of the LOC arrangements.

Bilateral arrangements are really just one-off transactions between the reinsurer, or the party that's buying the LOC, and the bank. It's very relationship-based. It's really just Insurance Company or Reinsurance Company A going to Bank B and negotiating an agreement on how much they'll pay for an LOC, how long the LOCs will be available and items like that. It's just a one-on-one negotiation and agreement.

A syndicated facility involves multiple banks, which allows for a spreading of the credit risk associated with the LOC. So a syndicated facility can be somewhat parallel to a pool of reinsurers, where there might be one lead reinsurer, and other reinsurers participate in the overall treaty. The same thing goes for an LOC facility: There might be one lead bank that actually arranges the facility, puts together all the documentation, issues the LOC and then participates in the risk of the LOC back to multiple other banks.

The syndicated facility is a more formal, structured legal arrangement. It typically involves various types of covenants that people should be aware of as they're putting the covenants in place because they may require minimum risk-based capital levels or control the amount of leverage or the debt-to-capital ratio that the buyer must maintain.

What that means is, if you enter into a facility like a syndicated facility—which is a legal commitment of the banks to issue that LOC when you need it—if, for one reason or another, you're not meeting your covenants, they're not under an obligation to issue that LOC. So you could be paying for a facility, and if you enter into some type of financial difficulties, or if something significant changes with your institution around the time where you need to go out and purchase that LOC, they may not be there.

Normally a syndicated arrangement is going to be at a higher cost than a bilateral arrangement because it's more structured with more legal-type requirements. Usually what you see now in the syndicated LOC facilities, instead of just paying an LOC fee each year for the bank issuing the LOC, now the banks are requesting an up-front fee, like a finder's fee or a bonus fee. They're also charging a facility fee, which is just to have the line available to the LOCs, and then also the cost of the LOC. So, you have three layers of cost now versus the old bilateral way, which is just sort of pay-as-you-go.

But the good news is that the syndicated facilities provide more capacity because you are able to have more banks involved, and also they're able to sell their exposure off into the credit market because it's a more structured legal arrangement.

The last type of relationship with the banks for LOCs is a guidance limit where the various banks will let your institution or reinsurer know how much in LOCs they'd be willing to extend. But it's not a legal commitment. It's sort of a handshake that says, "Well, we probably would be willing to give you x amount of LOCs," but if you went to them tomorrow, they could say, "No, it's not a legal commitment; we don't have to provide that."

### **Multiyear Contracts**

A multiyear contract is very similar to the syndicated facility, where you have multiple banks and a very formal legal structure. Here, instead of a 364-day facility, which has been the most popular in the past, given that we're trying to provide a capacity for reinsurance credits for a longer period of time, the banks and the reinsurers or insurance companies are looking for multiyear facilities in which there's a legal commitment for three-plus years. This translates into a higher cost because banks are tying up their capital for a longer period of time. But we are starting to see a few facilities in the marketplace for a term of more than one year.

### **Assets in Trust**

Another way that reinsurers can secure reserve credits is through the use of assets in trust. From the ceding company's perspective, it's almost like a funded LOC because the cash is already there and can be drawn out of the trust. So you don't have to go to the bank get the funds. It's efficient from a cost perspective if the

reinsurer can follow its normal investment strategy so that it doesn't lose any of the investment yield that it would normally earn.

It does introduce some investment restrictions for things such as Reg 114 that limits the type of investments that are allowed to be put into the trust, which might drive down the yield that otherwise would have been earned on the investment if a normal investment strategy could have been followed.

Assets in trust are probably very attractive to reinsurers that have excess assets that they're able to pledge to the trust. On the downside, from the reinsurer's perspective, it does encumber some of its assets.

### **Holding Company Guarantees**

Holding company guarantees might be required within the structure of companies where you're going to purchase the LOCs or in some more highly-structured financing techniques to secure the reserve credits. One of the parties involved in the transaction, like the bank, may require a holding company guarantee. You just need to be aware of those types of things because it could be prohibitive in other credit arrangements that your institution has with a bank or another credit provider.

Also, holding company guarantees can hinder the corporate structural defenses of an enterprise. The reason we have separate legal entities within a holding company structure is so that if one company potentially is having some difficulties, it doesn't taint or follow through to all the other companies. Where there's a holding company guarantee, that structural defense isn't as readily available.

### **Points to Ponder**

More than \$40 billion of reserve credits have been taken to unauthorized reinsurers through 2001. That number obviously is north of that now—we're late in 2003—with a few more years of production and growth in the inforce that was there back in 2001. There are some estimates out there that approximately half of the reserve credits were ceded to affiliates, which means that either direct writers were ceding to their own unauthorized reinsurer, their own offshore facility, or the reinsurers have been reinsuring it to their own offshore affiliates. XXX reserves will continue to grow, which will likely continue to increase these amounts.

LOC capacity probably won't be able to cover the increased needs. Future banking consolidations will have a chance to continue to reduce the overall LOC capacity.

### **The Horizon**

That's a reason why there need to be some other new facilities developed, as we go into the future, to help finance the XXX needs. The point we made earlier is that LOCs are one-year instruments, so that as we develop new types of ways to finance the XXX reserves, they hopefully will be for a longer duration and minimize that mismatch between the financing source and the liabilities.

**Emerging Sources**

There are newer things that are emerging in more of a structured financing world, for lack of a better term. One might consider this a new source of funding mechanisms besides LOCs. They hopefully will provide a longer-term solution for the financing need.

They may be highly complex. With an LOC, there are really two parties—the bank and the reinsurer or the applicant of the LOC, the borrower. In complex structured financing, there could be multiple parties involved because capital markets might be involved, and so on. So, there are a lot more parties to get on the same page.

There could require significant lead time to put in place. There are probably more accounting and disclosure items to consider with the more structured financings, due to the Enrons and everything that has happened over the past couple of years. There are a lot of accounting issues that you need to work through with your treasury areas as far as if it's on- or off-balance-sheet financing; and even if it's off-balance-sheet, what types of disclosures may be required in your financial statement to disclose what type of financing approach has been taken.

**MR. JAMES W. DALLAS:** I'm going to cover an overview of the life reinsurance market and how it is used to manage reserve strain caused by XXX and AXXX. I think it will give you a useful background as we go into a discussion of structured finance arrangements. I will then provide an overview of securitization with a focus on life insurance securitization. And last, I'll provide a couple of examples of structures that could be used for securitizations.

Life insurance companies often look to their reinsurance partners to help manage the strain caused by reserving requirements. This has been true historically, not just since the advent of XXX. For example, first-year zero YRT rates, which have been in use for quite some time, are a form of helping to finance the capital strain providing new business. Financial reinsurance, which has also been around for quite some time, is another way to help companies finance the strain.

If the reinsurer has lower reserving requirements, or the reinsurer has more capacity to take on reserve strain, then an opportunity is created to leverage that reinsurer's capital to make the pricing either more cost effective or to have the reinsurer just take on some of the strain caused by the reserves.

Most recently, direct writing companies have relied on their reinsurers to take on the reserve strain for level-term XXX business. The XXX reserve is often passed on to the reinsurers through coinsurance programs versus the use of YRT programs. YRT programs pass on very little of the reserve strain; that is why coinsurance is used.

Because of this, first-dollar quota shares have become quite popular in recent past because you can pass on 80 percent or 90 percent of the reserve strain through a first-dollar quota-share program.

For the most part, coinsurance of level-term business involves pretty straightforward reinsurance arrangements. Few issues emerge concerning non-guaranteed elements; that is, there are no crediting rates you have to worry about. There are no cost-of-insurance charges or policy loads to worry, as far as who sets those non-guaranteed elements. Level-term coinsurance is a pretty simple kind of arrangement to enter into.

Guideline AXXX has now clarified the reserving requirements for UL products with secondary guarantees. However, it's a little more difficult to reinsure the reserve strain on a UL product for a number of reasons. You do have non-guaranteed elements on UL products. That may make the treaty negotiation a little difficult—who's going to set the crediting rate? Who's going to manage the asset? Who's going to set the cost-of-insurance rates? So it may be a little more difficult to negotiate a structure on a UL product that passes the reserve strain.

UL products with secondary guarantees are a long-term problem. If you have a guarantee to age 100, then you potentially have a 100-year problem you may be trying to pass on to the reinsurer. But on level-term coinsurance, typically the longest-term plan is 30 years. So you have a potential 100-year problem versus, at most, a potential 30-year problem on level-term business. Plus there are some big volumes being sold out there today on UL products. So that just creates a problem in terms of the sheer level of reserves being created.

Financial reinsurance solutions have emerged, but those typically are only short-term solutions for what is a long-term problem. But there are some examples where financial reinsurance has been used for UL products.

For level-term insurance, coinsurance programs are still widely available, as many of you probably know. With consolidation of some of the number of reinsurers, the number of reinsurers you can go out to seek bids from has diminished.

Five-, 10-, 15- and 20-year plans still dominate with less emphasis on the longer-term plans such as 30-year plans. That's due to the large amount of reserves that are generated on a 30-year plan and the fact that it takes awhile to get to the humpback pattern on that 30-year plan. Those reserves could peak out in about 14 to 16 years.

Due to the consolidation and tightness in the LOC market, as well as in the reinsurance market itself, there's probably going to be some upward pricing pressures on reinsurers as they recalibrate their pricing to reflect the increase in LOC costs—which, of course, they use to help manage their capital. So we may see

some moving away from coinsurance back into YRT programs as the LOC crunch becomes more pronounced.

In fact, I was talking to one major reinsurer who indicated that, because of what they're having to price into their LOC costs, they basically have priced themselves out of the coinsurance market. And I made a dumb statement like, "Well, it must have cut back your production." And he said, "Oh, only 80 percent."

With UL products with secondary guarantees, few reinsurers offer solutions for these types of products. I'm only aware of one primary reinsurer who is actively in the market to help take on the reserve strain caused by these products. As an alternative, some companies have looked at their do-it-yourself strategies, where they'll set up their own offshore reinsurance companies and help to manage their overall capital not just on UL products but maybe on their annuity product line or other product lines through their own offshore reinsurance facility.

But companies who use their own offshore facilities may find themselves caught up in the LOC crunch themselves. I guess only time will tell whether the banks are going to limit the amount of LOCs to the overall industry, or, if direct companies going out in search of their own LOC capacity will create more LOC capacity than what might be available just for the reinsurers.

I do note that use of a do-it-yourself strategy is primarily for capital management purposes. When you use your own facility, whether it's offshore or onshore, you are not passing risk outside your enterprise. You are only managing your capital, and there's very little risk transfer, if any, when you do it that way.

### **Life Insurance Securitization**

Securitization is a form of financing and/or capital management available to life insurance companies. It involves the issuance of bonds whose principal and interest payments and value are based on the future profits that emerge from part of the life company's business.

Now, companies issuing bonds is not something new. The difference with securitization, or structured financing arrangements, is that the bonds are tied more closely to the future profits of a *specific* book of business rather than as the general obligation for a company.

The life insurance securitization market is less developed than the P&C market, since initial securitizations focused on low-occurrence, high-severity events that are more commonly found in the P&C market. Also, the initial securitizations were very short-term. Some of them were just for one year. Getting a one-year bond on a life insurance product doesn't do you much good.

Only a limited number of securitizations have occurred to date, but there is an increased level of interest in pursuing life securitizations.

**How It Works**

How does securitization work? Much like financial reinsurance, securitization monetizes the present value of future statutory profits or the embedded value of a block of business. Securitization is facilitated if the embedded value exists because of the conservative nature of the statutory accounting rules—that is, there are lots of interest margins in the statutory rules, or there are significant mortality margins to tap into.

A securitization transaction allows the company to raise debt secured against the release of these margins. Securitization is best suited to well-defined blocks of business with a significant level of redundant statutory reserves and/or capital—for example, the closed blocks formed by recently demutualized companies, or term business with a XXX reserve strain, or UL products with AXXX reserve strains.

Securitization can be used to meet a number of objectives. It can release equity. If sufficient risk is transferred to the bondholders, which it would be, then there may be a release of equity that has been set aside to support the block. It can reduce required capital. If the securitization is performed via a reinsurance agreement, the risk-based capital associated with the business may be released or decreased through the reinsurance agreement. It can improve your GAAP ROE. The negative impact of incurring the cost of the securitization could be less than the positive impact of a change or release in the capital, therefore improving your ROE ratio.

In some circumstances, it can help finance cash strain. Depending on the structure of the securitization, the cash that is raised may be available to offset the cash strain associated with writing the business.

**Comparing to Financial Reinsurance**

How does securitization compare to financial reinsurance? Well, it's similar in many respects to financial reinsurance.

Reinsurance has historically been used to accomplish the objectives of securitization, such as relieving capital strain. However, there may be emerging capacity issues in the reinsurance marketplace. Some see that reaching out to the capital markets through securitization may be the logical next step for some life insurers.

Securitization provides access to a market with almost unlimited capacity. Just think of the universe of life reinsurers compared to the entire universe of potential bondholders. So that's what you're trying to tap into with securitization. You're trying to reach out beyond the traditional life reinsurer marketplace.

However, since the capital markets have a learning curve to become familiar with underwriting risk, the transactions to date have been private placements with significant life industry participation as the lenders in the transactions. The next

challenge will be to reach out to those investors who are not already familiar with life insurance risks and the risk underlying the life insurance business.

High transaction cost means that securitization is currently a viable alternative for large blocks of business. Financial reinsurance can still be available for sizes down to, say, \$10 million at a very reasonable cost, without upfront costs. However, the fixed nature of many of the upfront costs for a securitization will lead to greater economies as deal sizes increase. Also, as more transactions are performed through securitization, that should lead to lower cost and, therefore, lower size capacities.

### **Examples**

The first significant life securitization was done by Prudential in 2001, and it raised \$1.75 billion in capital. A similar transaction was done by MONY in 2002, raising \$300 million. Both companies had formed closed blocks to protect the dividend interest of the participating policyholders as part of the demutualization process. Under the closed-block structure, assets equal to about 80 percent or 90 percent of the statutory liabilities were set aside to meet the liabilities of those closed blocks.

Assets supporting the remaining liabilities, plus target surplus, inure to the shareholders over time. It's those additional assets that are set aside that you can try to tap into through financial reinsurance or through a securitization.

Prudential and MONY both issued bonds that were secured by the earnings on and the release of those additional assets. Bonds were issued by newly formed intermediate holding companies, and the bond repayments are limited by the ability of the life company to pay dividends up to the holding company.

Chart 4 should help illustrate the value that is unlocked in a closed-block securitization. Looking at the liability side, each company has to set up the policy reserves for the closed block policies, which are mostly participating whole life policies. Above that, they have to have required capital just to stay as a healthy, solvent company.

If we move to the asset side, they actuarially determine how much in assets they need to satisfy these obligations over the lifetime of the blocks. The decision of what assets go into the closed block assets has to be approved by the regulators, and those are walled off from the other assets of the rest of the company. However, you can't have an imbalance. The company still has to have enough assets to equal the total liabilities plus the required capital. When a company does a securitization on a closed block, it's trying to tap into as much as possible of what Chart 4 shows as surplus assets and related assets.

The transactions allowed Prudential and MONY to monetize the embedded value of that closed block of businesses. The proceeds raised from the securitization could then be used to invest in high ROE businesses—at least, presumably, higher ROE businesses than the ROE being thrown off of the closed blocks.

In certain circumstances, the principal and interest payments could be guaranteed by a third-party bond insurer. This is called a wrap, and it provides an additional layer of assurance to the bondholders that the interest payments and principal payments will be paid. Prudential's issuance actually had some unwrapped debt. So it was a combination of wrapped and unwrapped debt.

The business itself—the closed block policies—actually resides within the operating company. Chart 5 shows that cash from the investors is sent to the intermediate holding company, which is above the operating company. That cash can then be deployed in the form of capital infusions, either into the actual operating company in which the business resides or, though it's not shown in the diagram, that cash can be sent to other subsidiaries. This is very important. You have cash that comes in, and the company that does the securitization has flexibility with how to deploy that capital. They don't have to put it into that operating company if they don't want to.

Now, the principal and interest payments that are made to the investors are supported by the dividend payments that come up from the operating company. So even though the cash that is sent to the holding company may not be put down to the operating company, the repayment of the interest and principal is thrown off the earnings of the operating company. There are dividend payments from the operating company to the holding company, which are all regulatory approved before they are made.

Take note that under this structure, there's no reinsurance agreement. I think this will become a little more important as we go onto the other structures that could be used for securitization.

Companies are exploring XXX securitization. Significant differences can emerge on a typical block of level-term business that is reserved using Guideline XXX, similar to UL reserved under AXXX (Chart 6). The top line shows the emergence of reserves using Guideline XXX reserving requirements, and the bottom line shows what one might consider to be the pattern of economic reserves on that same block of business; that is, the reserving pattern that might emerge under expected mortality, lapses, expenses and investment income.

It's not unusual for a large differential to emerge between the regulatory XXX reserves and the economic reserves. The goal here would be to raise, through the securitization, as much of the difference as possible between those two lines. A company is willing to hold the economic reserve because it's more realistic, but it has to fund the regulatory reserve somehow.

Under this securitization structure, the need for LOCs is avoided. This is because the cash that is raised in the securitization is placed in trust to support the reserve credits.

The debt can be issued in tranches corresponding to the required funding for the XXX reserves. One option might be to try to fund at the highest level of potential difference that's eventually going to emerge, but it's probably unlikely that you're going to get the investors to give you that amount. And probably the cost of carrying that additional funding over time would be cost prohibitive, as well. If they give you that amount now, then you're going to have to pay a cost on that capital. So what companies would probably look to do is try to do it in tranches as that capital funding need emerges.

The cost to the insurer is going to be the difference between the interest rate earned on the assets that are sitting in the trust and the debt interest rate. It has advantages compared to LOC structure. The future of capital markets is less of an issue. You have the broader capital markets rather than just the reinsurance market, with regard to the capacity issues. The net impact of future changes in market credit spreads is small because both sides of the balance sheet are affected.

Similar approaches could be used for securitizing Guideline AXXX reserves on UL products. Guideline AXXX reserves can be quite onerous compared to your economic reserves, and this redundancy could potentially be used in a securitization transaction.

Chart 7 illustrates another potential transaction. It shows that, in contrast to closed block securitization, everything takes place below the operating company rather than above the operating company. With this structure, we start with the reinsurance agreement down to the reinsurance company. The reinsurance agreement is structured such that the reserves are passed to the reinsurer, and it might not look any different than any level-term coinsurance program that you already have with your reinsurers.

The reinsurer could be an affiliate or it can be nonaffiliate. It could be a special purpose reinsurer, which is commonly used in P&C securitizations. The key is finding somebody who's comfortable with potentially having the debt on their books, because the debt that is issued is debt on the books.

Also, similar to the closed block, by entering into a reinsurance agreement, you've now walled off the block of business that is being securitized. It's easy to identify the profits that are being thrown off the block. So instead of having all those profits still remaining up at the operating company and being mixed in with the profits of the rest of your book of business, you now have walled off that book of business similar to what happens when you set up a closed block.

The cash that is raised from the investors through the issuance of securities from the special purpose reinsurer is placed in trust to support the reserve credits. The principal and interest payments are then made on the securities as the embedded value of the business is released and made available to the investors.

Now, an important element in assessing the feasibility of any securitization is determining the amount of redundant reserves in your block of business. To assess whether securitization may be feasible, you have to start off by calculating the economic reserves.

Think of the economic reserve as something very close to a gross premium valuation. Then you would need to take a close look at assessing the key risk factors—interest, mortality, persistency and funding levels, if it's a UL product. For term business, mortality and persistency are probably going to be your primary risks.

For UL products, interest risk may be the greatest risk that you have to get your arms around. No-lapse guarantees are often priced today with implicit 5 percent or 5.5 percent interest rates, but current new money rates on UL products may only be in the 5 percent to 5.5 percent range. So the products may be supported by portfolio-based assets. That may create a problem if you go to enter into a reinsurance agreement to wall off that block of business. But, again, that's something that you should be able to assess and analyze.

The nature and extent of these risks and how you may be able to control or manage these risks could affect your ability to attract investors for the securitization.

Some issues could emerge with the securitization. As of right now, there are high upfront costs. Typically you would need a pretty large transaction to make it cost-effective, maybe a \$300 million minimum size.

A securitization could create leverage on some companies' balance sheets. If you use an affiliate company to help facilitate the securitization, or even on the first structure, there is probably debt that's going to be appearing on somebody's balance sheet. So that's going to affect the financial ratios that the rating analysts and the investment analysts look at to decide how much financial leverage exists.

The closed block securitizations were seen as financial leverage by some rating agencies, so it affected negatively those companies' debt ratings. However, XXX securitization structures, if done in the right fashion, may be viewed more favorably if monies raised by the securitization are used to support the XXX reserves or other redundant reserves alone. There may be some indications that you get better treatment on the approach illustrated in Chart 7.

Is it worthwhile to go ahead and wrap it so you get the investors in? You may not get the investors in if you don't have it wrapped, but the cost might be prohibitive.

As for the capital markets' learning curve, as noninsurance industry investors become more familiar with life insurance securitizations, you'll probably see more securitizations happening.

**MR. VADIM D. MARCHENKO:** How would you compare the assumption reinsurance or outright sale of the block to the securitization in terms of complexity?

**MR. DALLAS:** Well, I would venture to guess that assumption reinsurance would be easier than the securitization. You do have different audiences you have to satisfy, I believe.

With the assumption reinsurance, you have to get policyholder approvals. I'm not as familiar with how lengthy that process might be. I think the more that securitizations happen, it'll probably make those types of transactions easier, but you might know better than I do how easy it is to do assumption reinsurance.

**MR. MARCHENKO:** There is also an option for administrative reinsurance, where you don't need to get policyholder approval.

**MR. DALLAS:** Well, keep in mind, what we're doing with securitization isn't necessarily selling the block. It's more helping to finance a block. I think of assumption reinsurance and administrative reinsurance as situations where you're selling the profits of those blocks. With securitization, you're probably not going to get 100 cents on the dollar for the value of the block. You're going to get something less than the embedded value of the block because it's more closely akin to a financial reinsurance transaction or a debt offering than it is selling a block of business.

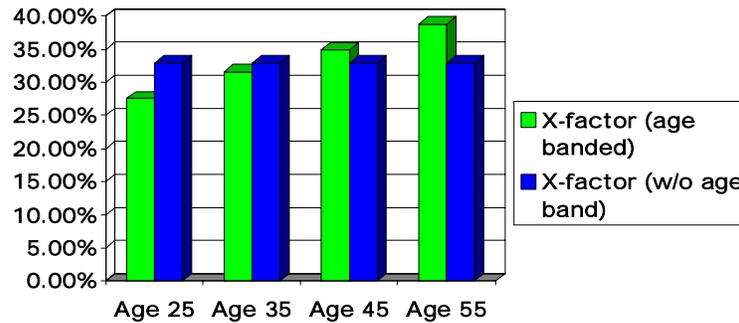
**FROM THE FLOOR:** As the 2001 CSO Table is adopted, if your state of domicile adopts 2001 CSO and other states haven't, is there a requirement to do multiple filings, or can you simply disclose the difference in reserves in the other states' filings? Have you addressed this issue?

**MR. TAHT:** I guess I haven't specifically addressed the issue. In looking in the issue, I have seen both utilized, and I think it depends upon your relationship with the state.

Chart 1

Example of impact of X-factor class design for a male preferred nonsmoker – 20-year term

- X-factors have been set as follows:
  - Maximum (NPV expected mortality/NPV 80 CSO w. 19-year select factors; Maximum(expected mortality/80 CSO w. 19-year select factors in first five policy durations)
  - Expected mortality = 30% of SOA 1975-80 ALB male select and ultimate

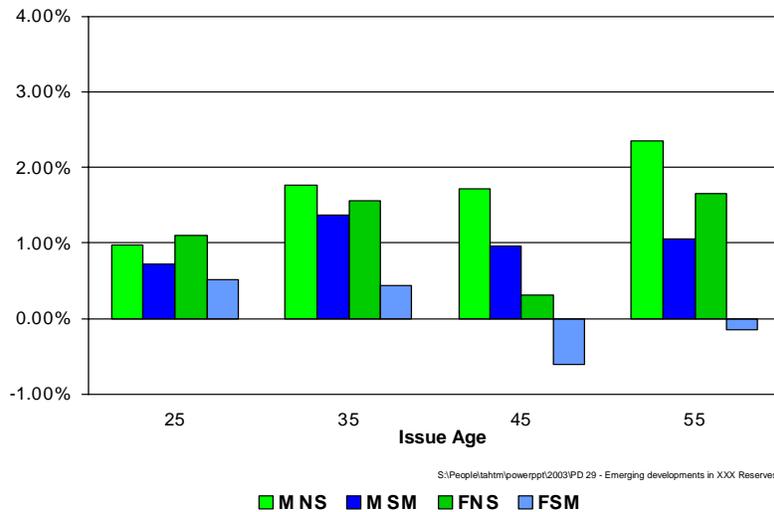


S:\People\lahm\powerppt\2003\PD 29 - Emerging developments in XXX Reserves - MT.ppt

Chart 2

Given the current use of reinsurance in the term market, we do not believe that 2001 CSO will have a significant impact on the term market

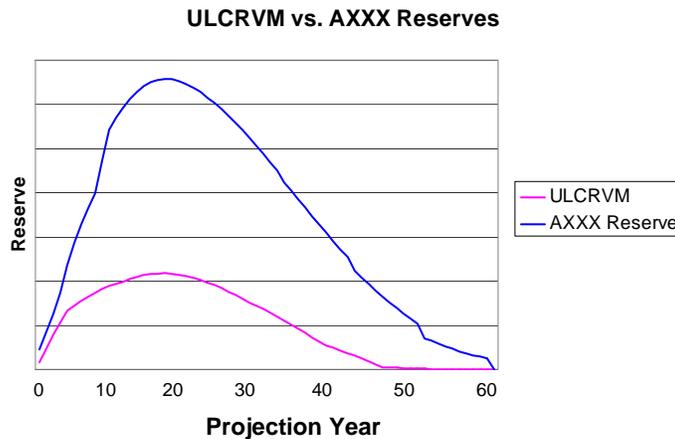
Change in profit margin discounted at 7% assuming 90% of reserve change subject to 1.00% LOC cost - 20 Year Term



S:\People\lahm\powerppt\2003\PD 29 - Emerging developments in XXX Reserves - MT.ppt

Chart 3

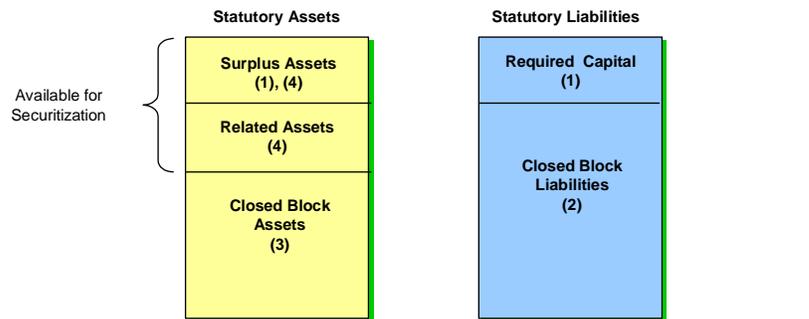
Guideline AXXX was adopted effective January 2003 for UL - it can have a material impact on UL reserves



S:\People\tahtm\powerppt\2003\PD 29 - Emerging developments in XXX Reserves - MT.ppt

Chart 4

Two closed block securitizations have occurred to date (cont'd)

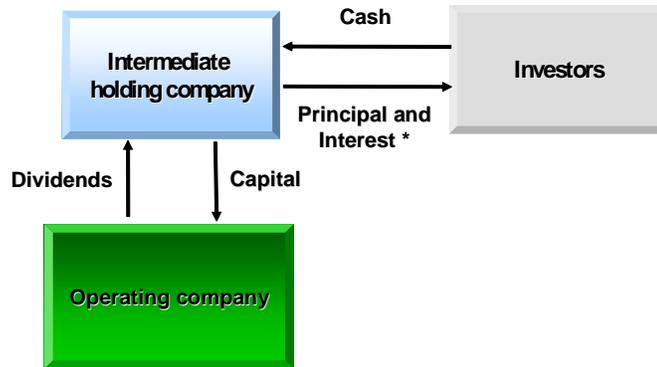


- (1) Surplus assets/required capital are based on RBC calculations and target RBC ratio
- (2) Closed Block Liabilities are based on statutory reserving rules
- (3) Closed Block Assets were calculated at the time of demutualization as the amount needed to mature liabilities and maintain the current dividend assuming a continuation of experience underlying the scale more...
- (4) Surplus and Related Assets provide for adverse deviation over and above

S:\People\tahtm\powerppt\2003\PD 29 - Emerging developments in XXX Reserves - MT.ppt

Chart 5

Closed block securitizations general structure



\* Principal and Interest payments made on general debt obligation of the intermediate holding company. Third party bond insurer provides a "wrap" to assure payments of principal and interest.

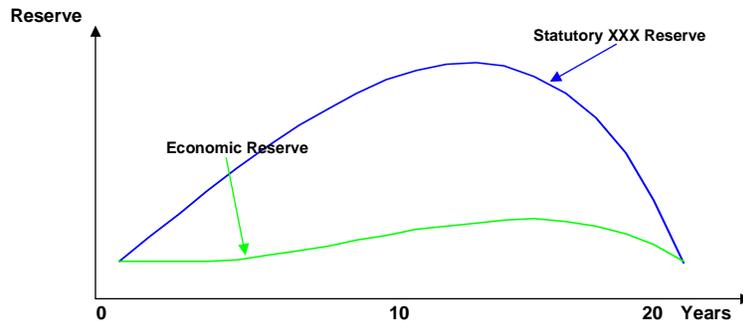
Tillinghast - Towers Perrin

16

Chart 6

Companies are exploring XXX securitization

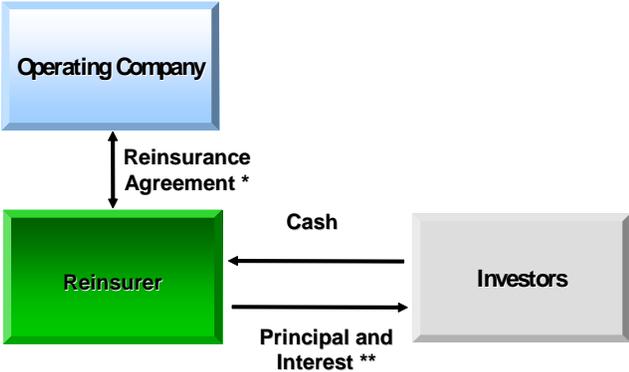
Regulation XXX results in significant long-term reserve strain for companies in the term market



more ...

Chart 7

Sample structure for securitization of redundant reserves



\* Reinsurance reserve credits are supported by assets placed in trust from the cash that is raised from the investors  
\*\* Principal and Interest payments made on securities issued by the special purpose reinsurer.