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Liquidity Standards - the Regulatory Aspects

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Summary: Continuing developments in the area of liquidity standards are addressed. The work of the American Academy of Actuaries Life Liquidity Work Group is reviewed. The requirements of New York's Circular Letter 33 (formerly Circular Letter 35) are discussed. The implications of these activities on company practice and reporting requirements are covered. Practical examples of company practice in handling liquidity risk are covered.

MR. DANIEL P. FOX: In addition to what the title of this session suggests, we'll have some information about what one company is doing in the way of measuring, monitoring, and managing liquidity risks.

Laura Rosenthal is an FSA and a senior associate actuary with John Hancock Life Insurance Company. She works in the Guaranteed and Structured Financial Products area that issues GICs, funding agreements and single purchase annuities. Her responsibilities there include medium-term cash management, presenting overviews of John Hancock's asset/liability management to GIC customers, and supporting the development of extensive asset/liability modeling (ALM) systems. Laura was co-chair of the Life Liquidity Work Group of the American Academy of Actuaries, and it's the work of that group that she will be sharing with us today.

Mark Greene is an FSA and a supervising actuary with the New York State Insurance Department. His responsibilities there include regulatory oversight of life insurers and reinsurers with an emphasis on statutory reserves, asset adequacy analysis, and other asset/liability management considerations. Mark was heavily involved in the drafting and implementation of New York's two Circular Letters regarding liquidity and the related follow-ups. He currently serves as a New York Department Representative on the NAIC's Life Liquidity Risk Working Group and the Life and Health Actuarial Task Force. Mark is going to be talking with us today

about recent activities of the New York State Insurance Department in the area of monitoring and enforcing liquidity management.

I'm an FSA and executive vice president of the Risk Management department of AEGON USA. My responsibilities there include quantifying, monitoring, and managing various asset and asset/liability management risks, including credit and interest rate risk, financial derivatives risk, alternative investments, and liquidity management. The Risk Management department is part of AEGON's asset/liability management structure and, as such, we work very closely with the rest of the investment division and various operating divisions of AEGON. I'll be sharing with you some of what my company does to manage and report on our liquidity profile.

MS. LAURA B. ROSENTHAL: The primary goal of the Academy's Life Liquidity Work Group was to produce a report on liquidity risk and its management. The report was prepared for the NAIC's Life Liquidity Risk Working Group and is 26 pages long.

Liquidity risk really began to draw some major attention in 1999. Early that year, the NAIC scheduled discussions regarding downgrade put provisions in GICs sold to municipalities. The NAIC's Life and Health Actuarial Task Force sent letters to state insurance departments outlining the risks of downgrade puts.

Then in August 1999, General American became news. General American Life Insurance Company sought state insurance department supervision when the demand for cash under funding agreements with seven day puts exceeded the amount that could be raised. This splash in the liquidity pool had a ripple effect. For example, New York's Circular Letters 35 and 33 had all the financial strength questionnaires, and now have sections asking about put options on funding agreements. Also in its wake, two work groups were created—the Life Liquidity Risk Working Group of the NAIC and the Life Liquidity Work Group of the American Academy of Actuaries. The Academy group created the report on liquidity risk.

One of our first jobs was to define liquidity risk. We defined liquidity as the ability to meet expected and unexpected demands for cash. So liquidity risk is the risk that, at some time, an entity will not have enough cash or liquid assets to meet expected and unexpected demands for cash. We all agreed that this risk is a function of both assets and liabilities. They play off one another. While we agreed that this risk is real, it can be managed.

Once we agreed on what liquidity risk was, the next step was to identify sources of risk. Sources of risk can be either external or at the company level. External triggers include a corporate credit downgrade, negative publicity based on either fact or fiction, or a general deterioration of the economy. Any of these events can cause an unexpected demand for cash, but whether any one company fails as a result of these demands is a function of the positioning of the individual company as well.

Some companies have more or less susceptibility to, or immunization from, liquidity risk than others. For example, if large sums of money are controlled by relatively

few entities, such as institutional-type products, there is more exposure to liquidity risk. I believe this caused a problem for Mutual Benefit several years ago.

Size can help you, or it can hurt you. Being a big company allows freer access to capital markets, but if a large company is forced to liquidate billions of dollars of assets all at once, the marketplace may not be able to absorb them at normal fair value, resulting in losses.

Demands on cash that are longer term are known well in advance and can be planned for and covered by careful asset management. Cash demands today increase risk, especially if cash is in short supply.

Unpredictability is a critical source of risk. If a company is exposed to unpredictable cash flows, such as demand deposits, the liquidity risk is higher. If the demands are scheduled and cannot be accelerated, the risk is reduced.

Liquid assets with long durations are a source of risk. A company may have a sufficient amount of liquid assets to balance its liquid liabilities, but if the asset durations are long and interest rates go up, the liquidation value will be less than par and may cause realized capital losses.

The final two sources are relatively clear—inadequate short-term borrowing facility and over-concentration of assets or liabilities.

Given that we know some of the sources of liquidity risk, we needed an approach to manage liquidity. The work group divided liquidity risk management into three levels: day-to-day cash management, ongoing or intermediate-term cash-flow management, and stress liquidity management. We defined the intermediate-term as 6 to 24 months into the future, and stress liquidity management as being prepared for high-cash demands in a very short period of time.

We decided that the report itself should focus on stress liquidity risk, even though all levels of liquidity management are important and are interrelated. The report describes a process for managing stress liquidity risk. The process can be used at the business unit level in large companies, as well as at the corporate level.

The approach has four components. First, product design, which is incorporating risk reduction techniques at the product level. Second, portfolio strategy, which is building an asset portfolio with the same liquidity risk profile as the liability portfolio. Third, systematic monitoring, which is making sure that both asset and liability portfolios are in line with the company's portfolio strategy. Fourth, a preparedness to act, which means formulating action plans that the company really would be willing to follow if liquidity risk exposure exceeds the company's comfort level.

The earlier comments on sources of liquidity risk were at the external or corporate level. There can also be sources of liquidity risk at the product level. Put options and funding agreements are now obviously pointed out as being risky imbedded liquidity options. Market value adjustment provisions and surrender charge provisions are also examples of product level liquidity risks. They're usually considered deterrents to cash withdrawals, but the work group was very clear that these provisions are

still a source of risk because they allow for cash withdrawals out of the company at the discretion of the policyholders or contract holders.

Policy loans may be covered by cash values, but cash can still go out the door. Some corporate-owned life insurance (COLI) or business-owned life insurance (BOLI) business may have group surrender options, which can add to liquidity risk. Benefit responsiveness in GICs is not a major liquidity risk, but it can still exacerbate a problem under some conditions.

Most companies will continue to sell products that have imbedded liquidity risk options, but there are some techniques that can reduce the risk exposure. Cash flow matching is very useful when asset and liability cash flows are known. Diversification of both assets and liabilities prevents over-exposure to any one particular market, especially during a stress scenario. Laddering liability maturities is similar to diversification, but with respect to time as opposed to product. Some companies may consider backing capital or surplus with liquid assets which would be intended for liquidation under stress, but these come with a price of a very low yield. Finally, while a company is in good financial health, it can set up a durable line of credit that can be accessed even under stressed conditions.

General American's portfolio was full of funding agreements with short-term puts. In contrast, Chart 1 shows a picture of John Hancock's GIC and funding agreement portfolio. This was not in the report either.

Many years ago, we sold GICs that had market value adjustment provisions and GICs that could surrender at the lesser of book or market. We now refer to these old contracts as GICs with wings because they could fly off at any time. They are represented in Chart 1 by the little tiny slivers of the pie. In 1991, we started issuing GICs and funding agreements that couldn't be surrendered at all. Notice how our flightless GICs have now taken over our portfolio, and our liquidity risk has now flown away.

An important part of stress liquidity risk management is measuring exposure to liquidity risk. Two types of tools lend themselves to this measurement: cash flow modeling and liquidity ratio tests. Cash flow models start by projecting all known cash flows, such as asset maturities, interest payments, and liability payments, to see where the biggest mismatches may be in the future. Different cash flow patterns may emerge under different assumptions about the exercise of any imbedded options on either the asset side or the liability side.

Liquidity ratios are another tool. Basically, liquidity-adjusted assets are divided by liquidity-adjusted liabilities. If the resulting ratio is greater than some predefined target, which is usually greater than one, the company is probably comfortable with the risk exposure; otherwise, it will probably want to act appropriately to reduce the risk.

Liquidity ratios can be developed for different time horizons such as seven days, one month, three months or one year, and for different economic scenarios, such as business as usual, or extreme stress, or an economic condition where yield curves go up by 400 basis points. In order to derive liquidity-adjusted assets,

haircuts must be applied to asset values so that the result is the company's best guess as to the cash that each asset class would generate under a specific time horizon. The size of the haircut depends on the asset class, how quickly the asset can be liquidated, and whether the asset has to be liquidated in a normal environment or under stress, or under some other economic scenario. Table 1 was suggested as a template to determine liquidity ratios. Filling in the blanks for your company will provide your company management with a good idea of your company's liquidity risk profile.

TABLE 1

Sample Liquidity Analysis Assessment
Based on Liquidity Ratios

	Seven days	One month	Three months	One year
Base Case (Business as Usual)				
Liquidity-Adjusted Assets				
Liquidity-Adjusted Liabilities				
Base Case Liquidity Ratios				
Base Case Risk Targets				
Base Case Risk Assessment				
Stress Case				
Liquidity-Adjusted Assets				
Liquidity-Adjusted Liabilities				
Stress Case Liquidity Ratios				
Stress Case Risk Targets				
Stress Case Risk Assessment				

While most of the report focused on what companies can do to understand and manage stress liquidity risk, one section was devoted to listing possible actions that regulators could use to regulate companies in their jurisdictions. Mark will go into this area in much more detail.

The Academy's report suggests two general paths that regulators could consider. First, they can rely on corporate management for greater disclosure, such as corporate governance, certification of stress liquidity risk, or answering more detailed questions about liquidity management. Alternatively, regulators can become more active, for example, by requiring detailed demonstrations before approval of certain contract provisions or disallowing certain provisions altogether.

The report has descriptions of how three different companies address liquidity management. These examples of best practices all include a recognition of liquidity risk, the use of risk reduction techniques, and the development and use of a solid stress liquidity risk management process. Each company does all these tasks differently, but they all do them. Later, Dan will take you through his company's process, which, I think, you will find follows the Academy's report, although I'm sure the real-life process was developed well before the report was.

MR. MARK J. GREENE: I was involved somewhat in the drafting and follow-up of New York's two Circular Letters that came in the wake of the General American problem. My intention today is to give an overview of New York's Circular Letter process, and to touch on not just what we are asking companies to do, but why we've decided to take that approach, and our thought process in drafting the letters.

Before I start, I need to say that I'm talking as an individual, not as a spokesperson for the department. Keep in mind that the Circular Letter exercise is not an end in itself. It's meant to be used with other regulatory tools mentioned in the Academy report. For example, the policy form approval process is critical, and we still feel that certain products should be approved only with conditions placed upon them, and some products, depending upon what they look like, probably should not be approved at all.

The first attempt at a Circular Letter was Circular Letter 35, issued in 1999 in the wake of General American's problem. That came as the result of a direct request from the superintendent at the time, Neil Levin, who had a very strong background on Wall Street. His reaction to the General American news was to get something out quickly. We needed to know if this was a pervasive problem or just an isolated incident. That immediately resulted in collaboration within the department, across the three major regulatory bureaus and a new capital markets bureau that has investment people. We did not try to get something very complete, as we wanted something out quickly.

The purpose of the Circular Letters came as a direct response to the General American crisis. Their purpose is, in general, to increase the company's awareness of the risk and to let us better understand how the company is actually managing the risk. The main advantage of a Circular Letter is that it's very flexible. If you try to draft a regulation or a law, it takes a long time to get something out and to get all the necessary buy-in and frame-out. If you want to act fast, the Circular Letter approach is your best avenue.

Circular Letter 35 was intended to be a stopgap measure. It should be viewed as a work in progress. We wanted to get the word out that liquidity just got on our radar screen and that we were going to be following up in a major way. I believe that sending that message was part of the purpose of getting out the letter. Getting something out quickly was as important as what the letter said because it sent a signal to companies that may have had problems like General American to quickly revisit what they were doing and why.

Common sense says a lot of companies very quickly reevaluated their reasoning and, in particular, whether or not they really were selling customer relationships. I think General American and Integrity Life managements were both quite surprised when the fund managers that had bought their product demanded their money so quickly. Common sense with benefit of hindsight says, if you're managing funds and you have a fiduciary interest or you're concerned with ratings for yourself, your job is basically to watch and react at the first sign of trouble. I don't fault the fund managers for getting their money. They basically were doing their job.

As Larry Gorski mentioned in last year's panel discussion on liquidity, the problem with that is it creates two classes of policyholders. One class is the one that takes its money and runs. The second class is the one that can't react as quickly, and is left to deal with the consequences, perhaps, of the company rehabilitation. That can be a long, messy, and unpleasant process for everybody.

The Circular Letter approach is certainly not perfect by any means, but we do think it's a good start. We were fortunate in that we got the full body of the industry on the front end, in particular, the Life Insurance Council of New York. They gave us very good advice on Circular Letter 35 and even more so with its successor, Circular Letter 33.

Circular Letter 35 was basically a knee-jerk reaction. We focused on a single point in time. We asked a very simple question: To what extent do illiquid assets back demand liabilities? We followed up cases where it was pretty obvious that you had assets like real estate, private placements or commercial mortgages backing liabilities that could be here today and gone tomorrow. That's pretty much all it amounted to. At the last minute, we decided to throw in a very simple exemption test, and there wasn't a whole lot of thought given to who would be exempt and who wouldn't. The main reason we put that in was to cut down on the enormous amount of work that we would have to do trying to sift through all of the responses, and we did not want to get overwhelmed with the detail because our other work wasn't going away.

Circular Letter 33, in my opinion, is much better than Circular Letter 35. It had the benefit of the Academy Work Group. It also had the benefit of a lot of feedback from the industry and also from the other state regulators—in particular, the NAIC Life Liquidity Risk Working Group. Circular Letter 33 changes the focus to consider a company's overall liquidity management process. Clearly, our focus is on stress liquidity management and we try to ask the right questions and follow up on a case-by-case basis.

Essentially, Circular Letter 33 has two parts. The first ten questions are what I consider general questions. The next 14 questions are more specific questions. How you've answered the first ten questions determines whether or not you have to answer the remaining 14 questions. Also, if you're a small company, you are exempted from answering the remaining 14 questions. Of course, we have a disclaimer in the middle of the Circular Letter that essentially says, "If we want to, we'll ask you anyway," so it's really not much of an exemption. We basically want the company to tell us, in their language, using their terms and their definitions, why they think they're okay.

The purpose of Circular Letter 33 is to encourage discipline in liquidity management and a written liquidity policy. Actually we don't encourage it, we expect it. We don't ask, "Do you have a liquidity policy?" We say, "Describe your liquidity policy" because we think everybody should have at least a liquidity policy. Then we go on to ask, "Do you have a written liquidity plan?" And then if you don't have a liquidity plan, the next question is, "Well, how come you don't have a liquidity plan? Why don't you think you need one?" And if you do have one, we ask you to describe it in simple terms.

The big advantage from my perspective, as one who may find himself reviewing 250 responses, is that companies are allowed to take advantage of existing information. We debated somewhat whether or not we really wanted to prescribe a template and force companies to provide information in a certain way. I had strongly held views that companies would end up having to cut and paste to fill out our template. Then we would be focusing mainly on reconciling how what they do fits into what we want.

I felt that the data should follow the company breakdown. There's some hidden value in how elegantly the company can report their liquidity-related information. It tells me how well thought-out they have been in managing the risk. As mentioned, the liquidity letter exempts detailed disclosure under certain conditions; for example, concentration risk information and information relating to customers of large institutional products. You can be exempted if you can get through the first ten questions.

This last issue was another hotly debated question. Who is supposed to fill this out? Who is responsible for it? A knee-jerk reaction from a lot of the actuaries was, the appointed actuary, of course. I personally didn't feel that the actuary was really the best person.

We made a mistake with the first Circular Letter. We just sent it to the company. We said, "Here, fill this thing out" and we got responses from people at different levels in the company. Sometimes a very senior officer filled it out, and other times a very junior officer filled it out. Sometimes when we followed up, we got an "I don't know" and that forced us to set up a conference call, in which case we had to invite more senior level people from the different areas to help explain to us what was going on. After thinking about it, we asked, "Who would be in the best position? Who really should know what's going on across the whole company?"

As everybody knows, companies are getting more and more complicated these days. They have several different divisions or segments. They can have several legal entities that roll up into large holding companies. It's such a convoluted arrangement that, if you're not careful, what's going on with one legal entity in the segment will have implications on another legal entity, as different legal entities live within the segments. We felt that the person who is acting as the chief financial officer for the legal entity is probably the one with the best overall view to be able to answer a question pertaining to a global risk-like liquidity. At a minimum, we figured that person would be able to talk to the right people.

If you look at Circular Letter 33, you will see that we required a statement from the chief financial officer or the person performing that function. It basically is an acknowledgment, not a certification per se. It's an acknowledgment saying, "I have consulted with all appropriate persons to ensure this response is complete and accurate. These persons include…," so we expect them to list the key people they talked to. Now those people are prime candidates to end up on a conference call if we have questions, so there's some incentive to fill this out well.

The acknowledgment goes on to say, “To the best of my knowledge and belief, the company has the financial flexibility to adequately manage stress liquidity conditions, except as noted below.” In other words, we ask a whole bunch of questions, but if we miss something, it’s a loaded question. We put the burden on the CFO to say, “Well, what did we miss?,” and they’re supposed to list in detail any exceptions.

The information is to be reported as of year-end 2000. The reporting deadline was April 1, so we decided it would be a good idea to have them identify any material subsequent events that happened after the reporting date. Of course, they sign it and give us all the contact information.

We will read that and, if we see anything that causes concern, we will follow up with the company. It may be a letter. It may be an informal phone call. It would depend on the severity of the perceived liquidity problem. I don’t think we’re going to jump to any conclusions. At a certain point, we might simply call the company and try to get them to elaborate.

Another key concern from the company’s perspective and from the department’s perspective was the need for confidentiality. Clearly, misinterpreted disclosures can harm the company. Those types of disclosures in the wrong hands could create a “run on the bank” risk. To explain what they’re doing may require that the company divulge what they consider to be a proprietary asset/liability management strategy.

Also, companies are very proprietary when it comes to protecting their customers. Those customers are often hard-won. They don’t want to put out to the universe who those customers are, particularly in the large institutional area. Furthermore, the customers may not be too fond of having their name thrown around in public disclosure.

With respect to protection from public disclosure, we considered the company’s request to keep confidential, even from us, the names of their customers, and we decided that we needed that information to assess the risk. In other words, we were asked, “Do you really need to know who our customers are?” and our answer was, “Yes.”

Clearly, customer expectations and customer relationships will play a large role in assessing the company’s liquidity risk. Who your customers are, I think, drives the likelihood of whether or not they’re more apt to pull their money out at the first sign of trouble. New York state law does allow confidentiality to be requested. If a company goes through the proper channels for requesting confidentiality, then the regulator must honor those confidentiality requests to the best of its ability. That is the approach we took with Circular Letters 33 and 35.

From looking at the responses that we received and also from following up with the companies, I’ve concluded that many companies simply don’t have any material liquidity risk. I’ve also concluded that standby lines of credit are often worthless. I hate to be that blunt, but most of them tend to be a preferred lending arrangement that says, “We’ll give you a line of credit if you don’t need one.” If you really need the credit, then the lender can back away.

That can hold true even for parent company relationships, although I have to confess that there is a very strong incentive for a big company that has its name on a subsidiary. It's going to step in and probably do the right thing, but still if it wants to cut and run, legally and technically, the standby letters of credit from parents of subsidiaries typically don't have very many teeth.

I also learned that the market values for the illiquid assets are quite soft. In other words, companies don't really know. It's like real estate agents telling you what your house is worth. They'll give you their best guess, but until you take the asset out on the open market and shop it, you really don't know. So what you end up doing is coming up with guesses as to what type of a haircut you would need to take in terms of the investment yield, depending upon how quickly you want to sell.

The Circular Letter 33 approach started down the path of our trying to prescribe something in the way of what assets could you sell and what percentage reduction you would take. We backed away from that because we figured we would never get there. We decided that a better approach would be "you tell us." If you had to sell assets quickly, what type of a cut would you take at market value, and why?

We have a capital markets bureau that has some street-smart investment people that have a lot of hands-on experience. We would have them on the conference call to a company, and they could talk with the company's investment people or investment advisors. We'd basically be bystanders, as actuaries, and see if our investment people could get comfortable with the answer. That means a proactive feedback loop is going to be essential. In other words, you're going to have to be able to give good reasons behind whatever you're telling us. We're not following a cookie-cutter template approach. We're basically using this Circular Letter approach as a springboard for discussion.

Since I have a roomful of actuaries here, I figured I would touch on the role of the appointed actuary because, again, the knee-jerk reaction was, "Let's lay this at the actuary's doorstep. Let the actuary fix the liquidity problem, too." That, when you really think about it, doesn't make a lot of sense.

Pretty much, actuaries deal with "expected" cash demands. The asset adequacy analysis requirement focuses on moderately adverse conditions. Liquidity, stress liquidity in particular, focuses primarily on catastrophic type risks. That's way beyond moderately adverse conditions. Stress liquidity is the "potential" cash demand, not "expected with some margin." Therefore, in my view, liquidity per se is outside the scope of the formal actuarial opinion on asset adequacy analysis. It's unfair to ask an opinion from an actuary since the degree of rigor in the testing is so severe. On the other hand, liquidity certainly can influence the cash-flow testing in at least three ways.

The first is if your cash-flow testing requires the sale of illiquid assets. You're going to have to come up with the market valuation for those assets. In other words, if you need to sell real estate or private placements, you need a pretty decent market valuation.

The second is with withdrawal assumptions. Most people who have done cash-flow testing will probably agree that it's very reasonable to assume that if you maintain a current credited rate, you're not going to have to use dynamic lapse assumptions. You basically are always giving people a good deal, so why should you get any shock lapses?

Liquidity suggests that maybe that's not the most reasonable assumption and perhaps there should be some sensitivity testing. For example, funding agreements sold by General American and Integrity Life were "floating rate" funding agreements. They were always very competitive on the interest rate, but ratings downgrades and other forces still dictated that people took their money. Even though they had a good rate, the business left. When you're doing cash-flow testing, it may not be wise to simply assume that you credit the current rate and everything is fine. As part of our follow-up, we asked appointed actuaries the extent to which they did any sensitivity of shock lapse rates just to provide for that type of risk. Again, it may be unfair to impose a severe testing requirement on asset adequacy analysis, but to the extent a company has put in place sophisticated models, it makes a useful tool for looking at the problem.

The third way liquidity risk can impact you is if you are using a product balancing strategy. Assume you are aggregating cash value business with business that has no cash values, and relying heavily on your aggregation. It could be you're exposed to an extreme liquidity risk. For a variety of reasons, what could happen is the business that can leave will be "here today, gone tomorrow," and you're stuck with the other stuff. If the demand liability is, in effect, subsidizing the cash-flow testing for the non-cash value business, then you could find yourself in a situation where you have a book of business that's not going to do very well on the decreasing interest rate scenarios. That's another thing to keep in mind.

With respect to the future direction, I don't see it very likely that liquidity is going to find its way into risk-based capital calculations. From discussions that have taken place at the NAIC Life Liquidity Risk Working Group, it seems like that's not going to happen. There's not going to be a formula per se that requires some well-defined charge for liquidity.

Interestingly, we had some people from the Fed at the last meeting with the Life Liquidity Risk Working Group, and it seemed that they have no explicit formulas for liquidity either. They basically look at liquidity, company by company. They were adamant in saying that liquidity risk is something that varies from company to company. You just don't have a "one size fits all" approach.

With respect to looking at liquidity for life insurance companies, I see a trend toward a "banking" type of regulatory template. I know that New York is very much moving in that direction. There's a strong focus on risk-based reviews, company by company. Also, I see a much greater reliance on capital market professionals, that is, people who are very, very familiar with the asset side of the balance sheet and who can ask the right questions at the right time.

Questions that come up whenever you're following up on liquidity could be related to asset sales of private placements. The answer will come back, "What kind of

private placements?" There are all different flavors of private placements. Some you can sell very quickly and some take forever. Other questions have to do with the haircut. What type of haircut do you take if you have to sell something quickly? Well, frankly, as actuaries, we don't know. We need somebody who has had a lot of experience buying and selling those types of assets, constructing sales, and the like. They're going to ask a lot of questions that we just don't know to ask.

Other questions might come up. The company may tell us, "Well, if we're pressed, we'll securitize. We'll securitize our commercial mortgages." Well, okay, how long does it take to do that? I've never securitized a commercial mortgage portfolio. I don't have a clue how long it would take. So it's very helpful to have somebody who has had some experience in those types of things sitting there during the call, that is, somebody who can ask the right questions, to the right person, at the right time.

They may want to know more about external investment advisors. "Who did you get that number from?" As nearly as I can tell, maybe you get better values depending upon whom you ask. Maybe you can say, "Well, could you sell it for this or that?" And you shop around and maybe there's a wide disparity in the quotes that you would get from different investment advisors as to what it's worth. I wouldn't know if the company had asked for several quotes and took the "best" price, but if you have somebody who's savvy on the investment side, they're more likely to be able to pin down the correct value.

If I had to sum up my thoughts on liquidity risk, my best advice is that you have to be prudent. You have to use a lot of common sense, and you have to do like Bear Bryant, the Alabama football coach used to say, "You have to expect the unexpected."

MR. FOX: I'm going to present my company's approach to managing and monitoring liquidity risk, and in order to do that, I need to give you a little background as to how my company is organized. That way, our approach will make a bit more sense.

I work for AEGON USA. That's the U.S.A. operations of AEGON, a Dutch company. We have about $84 billion in general account assets, as well as a fair amount of separate account assets and liabilities. It would be hard to find too many asset classes in which we did not somehow participate.

Structurally, we're divided into different divisions and legal entities. Mark alluded to this earlier—we're one of those companies that has a lot of structural complexities. We have about 15 different divisions, and by divisions I mean different operating units that are selling different products in different marketplaces, perhaps using different distribution systems. By legal entities, I'm referring to life insurance companies. We have about 15 of those as well. So, potentially 225 different combinations of legal entities and divisions.

We sell many different types of products. We sell everything from deferred annuities and structured settlements to institutional products, immediate annuities, payout annuities, and certainly a fair share of traditional and universal life and interest-

sensitive whole life. We have BOLI and COLI, pension buy-outs, 401(k)-type products, equity linked annuities, and lots of different types of products with different asset/liability issues, management challenges, and, certainly, different liquidity profiles.

AEGON USA got to be where it is today through a number of relatively large acquisitions over the past couple of years. In 1997, AEGON bought Providian, and in 1999, AEGON merged with Transamerica. Through the course of those acquisitions the company more than tripled in size. Providian was the group that sold a fair amount of institutional business, GICs and funding agreements. I'm from Providian originally. Back in the late '80s and early '90s, because of the presence of the institutional business, Providian had done some work to develop a liquidity measurement process. So what I'm going to describe to you today was in fact begun a long time ago and has been amended over the years.

When we first developed the process, we adopted some basic principles. First of all, we didn't see liquidity risk management as the same thing as cash-flow management, cash-flow mismatch management, or interest rate risk management, for that matter. While cash-matching and interest-rate risk management are obviously very important, our focus with liquidity management is to ensure that in both normal times and stressful times there's sufficient liquidity in the asset portfolio to make good on the promises we've made to customers. That's why liquidity risk is being modeled and monitored separately from other types of risks.

Obviously, we need to provide for unexpected cash needs. That's not to say that we need not be concerned about expected cash needs. We also need to recognize that unexpected cash needs can arise from a number of different sources. I won't go into all of those, as Laura already mentioned a couple of them—things like rating agency downgrades, material interest rate changes where our crediting rate decisions do not adequately prevent elevated withdrawals, etc.

In general, we decided that the portfolios we manage need to be self-supporting from a liquidity standpoint. By that, I mean that in determining whether we have sufficient liquidity, we are not going to rely on corporate lines of credit, even though they do exist. We're also not going to rely on new business sales to produce the cash that we could use to fund withdrawing policyholders. We're also not going to rely on credited interest retention on in-force business.

Why are we ignoring these potential sources of cash? There are a number of reasons. Take corporate lines of credit. Mark indicated that in times of stress they may not be there, and that's definitely possible, so perhaps we shouldn't count on them. After all, this is a stress liquidity management tool.

Why not rely on new business sales? Depending upon the reason for the liquidity crisis, we may not be able to attract much in the way of new premiums. Additionally, we didn't want to rely on surplus or other divisions' assets in ensuring that each portfolio has sufficient liquidity. On the one hand, you can view these as measures of conservatism. On the other hand, they're prudent management measures.

Here are some other basic principles. Obviously, if we're going to build in the cost of maintaining sufficient liquidity in product portfolios, then the products themselves should bear the cost. That is, we have to build this into pricing.

We also want to make sure we have standards which divisions, legal entities, and the company in aggregate are held responsible for maintaining. So we established certain standards that I'll talk about in just a minute.

And we certainly don't want to do all this work and keep it to ourselves and not share it with senior management. So we do this liquidity analysis on a quarterly basis, and we communicate the results to several different committees that are part of our asset liability management structure. Finally, as Laura already mentioned, it's important for a company to have a written, tested, liquidity plan that *can* be used and *will* be used in times of need. That's not something that I'm going to talk much about, but that's also part of our management process.

Very simply, our approach is to compare the amount of cash that we can raise via asset sales with the amount of cash we may need to fund withdrawals, death benefits, operating expenses, etc. So we're comparing available liquidity to liquidity needs.

Available liquidity is the cash that we can raise from selling assets at fair value. We'll come back to the term "fair value" in a minute. Basically, available liquidity equals our current asset balances (market value basis) multiplied by a set of asset factors. The asset factors vary by asset class and time horizon. They don't vary security by security. That would likely make the task overwhelming.

We define an asset class for these purposes as a collection of asset types that have similar liquidity characteristics. If we believe that there are different amounts of liquidity in the investment grade industrial sector than there are in the investment grade banking sector, then we would have different sets of liquidity factors for them. If we don't think that there's a material difference, then we wouldn't need to develop two sets. These factors are also going to vary by time horizon. Our time horizons vary from seven days to several years.

Why such a big range? A very, very, very small amount of our business is institutional seven-day put business. We don't want to lose sight of that. Why several years? We have potential and known withdrawals and liquidity needs extending out years. We want to look out three years in the event that an earlier period of elevated withdrawals—possibly even a run on the bank in the early years—was addressed by selling all of our liquid assets. We still need to be able to fund continuing obligations in the second and third years.

The asset factors that we use are developed by the Investment division. We include the appropriate asset specialists who are in the best position to know how liquid these asset classes are. The factors are refreshed periodically.

The liability side gives rise to the liquidity needs. This is the second part of the equation. The approach here is basically the same. We have product balances that can be withdrawn. Under various scenarios that may unfold, we have different

expectations of the levels of withdrawals we will experience. So “expected” means what we might expect given the scenario we’re in.

In a normal scenario, we expect normal levels of withdrawals. In a stress scenario, we would expect much, much worse. These factors are applied to the liability balances, and the product of the two generates potential amounts of needed liquidity. The factors vary within each division by product and time horizon. The product differentiation here is the level that’s necessary to make distinctions between products that have potentially different liquidity needs.

The time horizons are the same as the time horizons that are used on the asset side. Liability factors are going to vary by economic scenario, as well. Liability factors are determined by divisional personnel—people in the operating divisions where the products are developed, priced, and sold.

There are parts of our asset liability management structure at AEGON USA, called portfolio management teams, that play a role here. A portfolio management team is made up of the portfolio manager responsible for managing the assets for that particular division, several divisional personnel (product actuaries, CFOs, etc.) and a risk manager from our department. This small group acts as the asset liability committee for that particular division. It’s important for this group to periodically review the liquidity factors that represent the potential liquidity needs to make sure they are current and realistic.

To the extent possible, we try to back-test these factors. There’s not a lot of data out there that enables us to do that, but periodically a company will get in trouble because it has certain products on the books requiring considerable liquidity, and we can use the experience of that company to gauge the reasonableness of our factors. We need to learn from other companies’ experiences.

We look at two measures. We look at the difference between the available liquidity in the assets and the potential liquidity needs in the liabilities. The difference is the excess liquidity that’s in a divisional portfolio for the particular time horizon under consideration. We also form a coverage ratio by dividing the available liquidity by the liquidity needed. This is the ratio that Laura was referring to earlier. We’d like this ratio to be above one, obviously.

We look at different economic scenarios that reflect increasingly difficult environments in which to operate. We look at a normal withdrawal scenario where expected levels of lapses, death benefits and operating expenses are taken into consideration, and move on to high withdrawal, stress, panic and nightmare scenarios.

By the way, we’ve all been using the word "stress" throughout this presentation. Stress is sort of a vague term. It means different things to different people. I’m using stress to mean an environment that’s not as bad as a panic. We’ve defined stress for our purposes as a material multi-notch ratings downgrade. That’s going to be painful for our company because we have a fair amount of ratings-driven business. We’ve defined a panic scenario as one step worse—a run on the bank.

Last is the Chairman's Nightmare Scenario. This is the worst *conceivable* situation. It's not necessarily the worst *possible*, though. For example, technically it's possible for all home service life insurance policyholders to demand their cash values tomorrow, but that's not conceivable. So, "worst possible" may be one step beyond "nightmare," depending on the product.

Standards are tests we apply to divisions, legal entities, and the company in aggregate to make sure that sufficient liquidity is being maintained. Each division must maintain a coverage ratio greater than 1.0 under the panic scenario—the run–on-the-bank scenario.

Legal entities must each pass the same test. They have to pass these tests at all time horizons: seven days, 30 days, 90 days, 180 days, one year, two years, and three years. And in aggregate—that is, the company as a whole—we need to have a coverage ratio above 1.0 at all time horizons under the nightmare scenario.

You can see that's a different scenario than the one that was applied to the divisions and the legal entities. In this case, we feel justified in requiring a division that is not suffering elevated withdrawals to sell some assets out of its portfolio to help fund some of the withdrawals that are occurring in a portfolio experiencing greatly elevated withdrawals. Remember, the elevated withdrawals that we're talking about in this scenario are large. From a division standpoint and from a legal entity standpoint, the panic scenario is a sufficiently adverse scenario to test. We have a management asset/liability management committee that meets on a quarterly basis, and a board asset/liability management committee, as most companies do, and all this information is reported to those groups and reviewed with them on a regular basis.

All the numbers in the following charts are made up. Chart 2 shows liquidity coverage ratios for three different divisions: Divisions A, B and C. The hurdle is a ratio of 1.0. We want all the bars to always be above 1.0. Some divisions have a liquidity profile that unfolds unevenly over time, and that's not surprising. Division A, for example, has its greatest amount of excess liquidity at the 90-day horizon. It builds up and then starts to decrease, whereas Division C has its greatest amount of excess liquidity very early on and then it slowly decreases. I mentioned there are time horizons going out to three years, but for space purposes, the chart only shows numbers through one year.

Chart 3 is for the company in aggregate. Here we're talking about the nightmare scenario. The first set of bars here represent the corporation's liquidity ratios, and the shorter set of bars that are even at 1.0 represent the hurdle.

We're also looking at things on a legal-entity basis. On a legal-entity basis, we're back to the panic scenario, and the same type of display is shown. Chart 4 shows dollars of excess liquidity, so the title of the chart is incorrect.

In summary, the points that I'd like to make from the company standpoint are these. First, liquidity risk is best managed separately from interest rate risk. The asset portfolio should be constructed to be self-supporting from a liquidity standpoint. If you're serious about maintaining sufficient liquidity, this will prevent

you from doing certain things in the asset portfolio that you might otherwise like to do.

The cost of maintaining sufficient liquidity has to be borne by the products in their pricing. You should definitely have a written liquidity plan—one in which parties understand their respective roles, and have management's commitment that it can be and will be implemented.

To the extent possible, you should pre-test the plan. You should generate some type of a trial-crisis scenario, to see how things unfold, to learn what worked and what didn't work so well, and then to fix it in case a real crisis happens. And finally, the liquidity analysis that's done needs to be communicated to senior management on a regular basis, to make clear its importance.

MR. STEVEN MICHAEL ARNHOLD: A question for those of us who aren't licensed in the state of New York: Where are other states in this whole process? And for Mark, letters of credit are still acceptable for reinsurance purposes; you're just not looking at them from liquidity purposes, right?

My other question is on parent company and holding company relationships. We are also in a huge Dutch company. The question is: Do you look at things on a company basis, or do you look at things on a legal-entity basis?

MR. GREENE: I can't speak for the other regulators. I can tell you the Life Liquidity Risk Working Group seems to be following the Circular Letter in a New York-type approach. There will be a final report coming out by the end of the year from that working group, and then the working group will disband unless it is renewed.

MR. ARNHOLD: So this might be something that we're looking for at the end of 2001 or in 2002?

MR. GREENE: Right. I don't see any implementation of such a thing elsewhere this year. There is some talk of putting the appointed actuary more directly into the loop. Some people are still attracted to that idea. I have some reservations about how much benefit the actuary can add to this. But basically what's going on is fact-finding, digesting what the Academy Work Group did, considering alternatives like an explicit charge put into risk-based capital (which doesn't seem to be going anywhere right now). If I had to speculate, I would say that for liquidity, we'll be seeing more of a banking template for regulating that type of risk.

The downside, and one of the concerns from other states, is that they really can't follow this type of approach as well as, say, New York. New York has a lot bigger staff than most of the other insurance departments. So while the Circular Letter approach is more robust, it's also more time-consuming. It assumes that you have people who can actually digest what the company tells you and then follow up with them. Given that we send out probably over 250 Circular Letters, that's a lot of work to go in and understand each and every company. So for practical purposes, what will happen is that the company responses will be prioritized. You'll get put on a different priority, and liquidity will be one of a number of items that might end up triggering a risk-based review or follow-up.

With regard to your second question, I can't really speak to letters of credit with respect to reinsurance. On liquidity, all I was saying with respect to the standby letters of credit was that I've read some samples that we got as a result of our follow-up, and I was just simply not impressed with them. I ran them by a couple of the attorneys in our policy forms area who work day in and day out with funding agreements and GICs. They weren't impressed with them, so we basically dismissed them.

With respect to parent-subsidiary relationships, we have a separate unit in New York City that looks at capital adequacy, and those people, for lack of a better description, follow more of the show-me-the-money type of approach. They don't want the promise: "We'll put the money in when we have to put the money in. We're good for it, trust us." I have seen some tangible-net-worth agreements from parents saying that if the net worth falls below a certain level, then they will put money in. I think those are probably a little more reliable than "it's in our interest to have a healthy subsidiary."

I have seen occasions where the supervising examiner who's responsible for a company would not accept even an ironclad agreement from a parent to a subsidiary in certain cases, but I can't go into the details. That was definitely a position where they wanted the actual money residing in the New York legal entity. It just gives the regulator a little bit more comfort as far as the money leaving.

MR. ARNOLD N. GREENSPOON: I'm with MONY Life, a New York-domiciled company. Having gone through this process recently of drafting my company's liquidity plan, I just want to make a comment on it. First of all, I want to compliment the New York Department on the work they did in getting companies aware of the issue and forcing us to have such plans, although it wasn't exactly the way I wanted to spend my time during February and March.

In drafting the plan, I found the most difficult task to be to define "stress liquidity." It's an undefined term. We all know that if everything is fine, and one day you're downgraded by three notches by all the rating agencies, you have a stress liquidity situation.

But in the real world, things are more subtle than that, even though with General American things apparently developed quite suddenly. But who knows if they were really that sudden to General American?

I think in drafting a plan one must come up with a definition of "stress liquidity" in order to affect management actions—what to do when stress liquidity arises. But for any definition you come up with, immediately management will turn around and say, "You cannot force us to look at any blip in a surrender rate as a liquidity crisis." Requiring serious management action for every blip will disable the company from efficient management and, therefore, I think it behooves us to come up with a proper definition that will enable them to act on the proper thresholds and not before.

One comment to Mr. Fox. It sounds like AEGON has a very impressive liquidity plan, but it seems to me that the requirement of sufficient liquidity in each operating

division to meet liquidity targets is giving up a lot of synergy in the operation of the company. Since liquidity should be a company concern, I think that below the legal-entity level, at least, I would hate to see such a development be required.

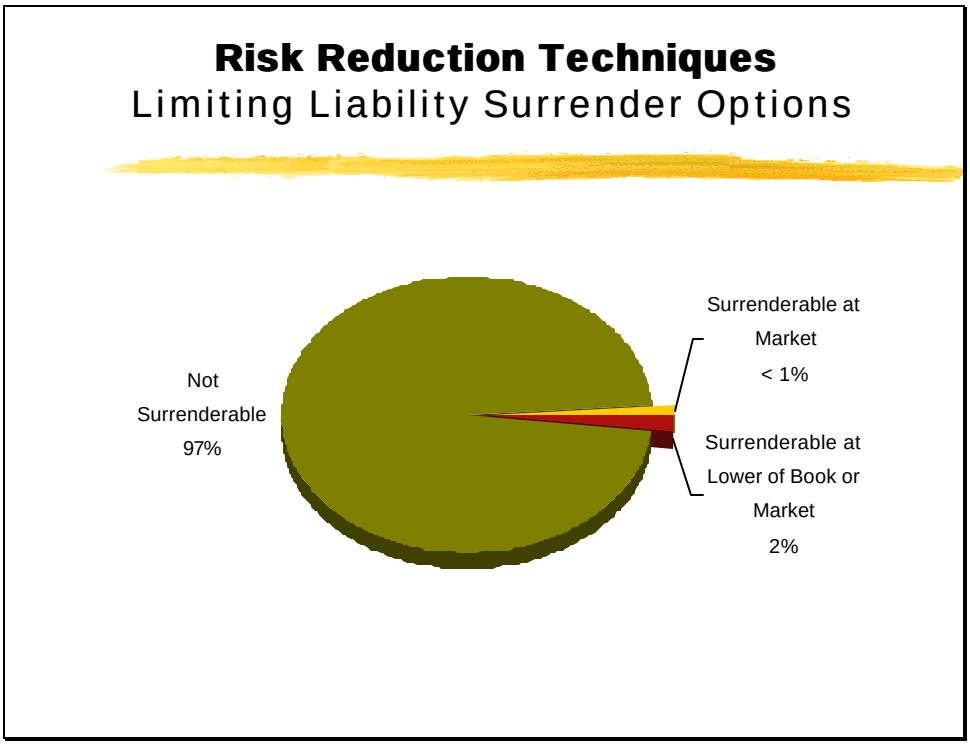
MR. GREENE: You raised an interesting question as to the definition of stress liquidity. Frankly, it never came up in any conversation. Everybody just presumed that everybody would have a sense of what that meant. It's one of those terms that each company defines. It's like "moderately adverse conditions." The only way to define it is with another equally ambiguous term. Dan showed a spectrum of liquidity stress situations, so I wouldn't put too much emphasis on the word "stress." I think the answer is going to depend on the particular company and the particular business. The company would have to explain why they would consider something a "stress condition."

One thing I've wondered about down the road. We're looking at these liquidity plans, but what happens when the company decides to take a right turn and depart dramatically from what they told us their liquidity plan was? We're not approving or disapproving these plans per se. They're basically representations and not warranties. As part of the follow-up, companies could expect questions like, "Have you deviated from your liquidity plan in a material way? And if you did, why did you do that? And, by the way, did you change your liquidity plan from last year? And if you did that, then why did you do that?"

As a reviewer, I don't want to see a liquidity plan that somebody can change at a moment's notice because to me that's not any good. I would want to have some reassurance from the top company management that something will happen to somebody if they don't follow their liquidity plan with some discipline; otherwise, it's not worth the paper it's written on.

MR. FOX: The only thing I would add is that the company may not want to "guarantee" in its written liquidity plan that it will take certain actions if certain events unfold. Instead, if these events unfold, a group of people (identified in advance) will be convened to manage the situation. Managing the situation will call for different levels of action, depending upon the particular scenario that unfolds. The point is that there is a group of people charged with managing the company through that difficult liquidity situation.

CHART 1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Not Surrenderable 97%
Surrenderable at Market < 1%
Surrenderable at Lower of Book or Market 2%

CHART 2

Liquidity - A Company Perspective

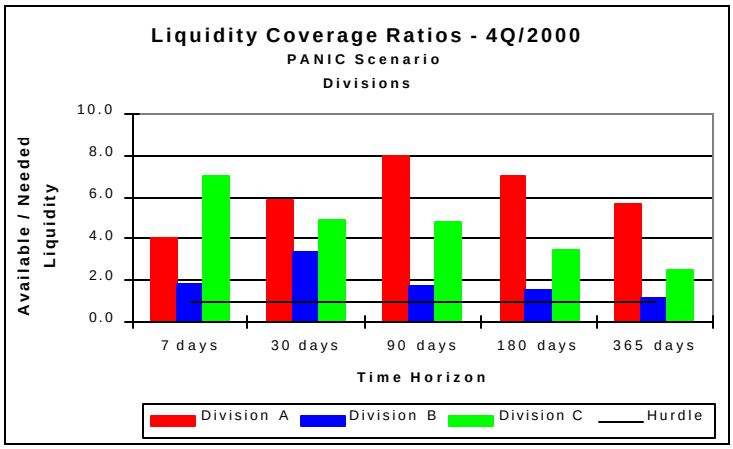

CHART 3

Liquidity - A Company Perspective

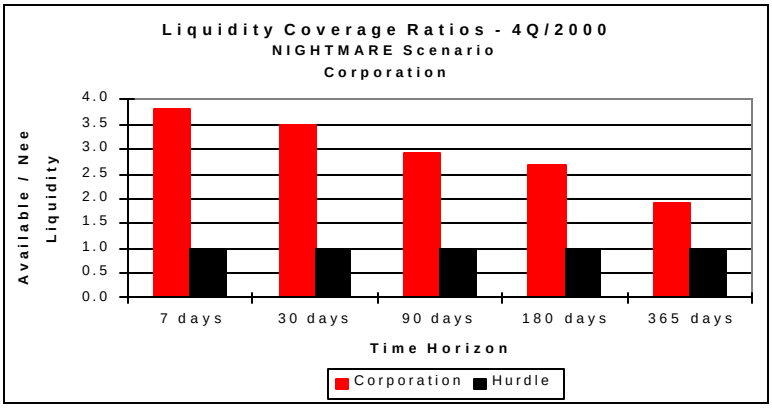

CHART 4

Liquidity - A Company Perspective