

RECORD, Volume 25, No. 1*

Atlanta Spring Meeting
May 24–25, 1999

Session 5PD

Liquidity: How Much is Enough?

Track: Investment

Key Words: Asset Topics, Asset/Liability Management, Interest-Sensitive Products, Investments, Solvency

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Summary: The panel discusses liquidity risk and the rating agencies' viewpoint on liquidity requirements, including:

- *Required liquidity for various liabilities*
- *The effect of product design on required liquidity*
- *The liquidity available from various asset classes*
- *The effect of liquidity on insurance companies' claims paying ratings.*

Mr. Peter D. Tilley: I head up the asset/liability (A/L) modeling practice at Great-West Life in Denver, and I have two very good panelists.

Our first speaker today will be Neil Strauss from Standard & Poor's (S&P). Neil is a senior analyst at S&P. He has primary responsibility for the analysis of 20 life insurance companies in the U.S. and Canada and sits on the Rating Committee for several international insurers. He's the analyst with primary responsibility for issues relating to liquidity and individual insurance. Prior to joining S&P, Neil was employed for several years as an actuary in the insurance industry, holding positions at New York Life, Monarch Resources, and Monumental Life. During that time, he gained experience in such actuarial functions as cash-flow testing, pricing, financial reporting, and experience studies analysis.

Our next speaker is Jane Kinney. Jane is a partner with the Global Financial Services Industry Risk Management and Control Practice in the Toronto office of Deloitte & Touche. Her focus within the risk management group is financial institutions, with special expertise in risk and control technology and the enterprise risk management methodology. Prior to joining Deloitte & Touche, Jane worked with the Bank of Montreal in the corporate audit function, with responsibility for international and treasury operations. Jane consults to a wide range of financial

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institutions in the area of risk management and control with a recent focus on operational risk management within banks and insurance companies. During the past year, she has assisted numerous life insurance companies in responding to the new Standards of Sound Business and Financial Practices, which is required by the Canadian regulatory system, the Office of Superintendent of Financial Institutions (OSFI). She also provides services involving documentation assistance, audit committee reporting, and independent review.

Neil will cover the rating agency perspective on liquidity, and Jane will cover the audit perspective on liquidity.

Mr. Neil T. Strauss: My topic today is S&P's approach to liquidity. S&P has been in business since 1860, mostly known for the equity side of the business—the S&P 500 and equity research—but S&P also has been rating bonds since 1960, which is also pretty well-known among those in the financial services community. Moody's and S&P have been probably the two major names in rating bonds worldwide over the past 75 years. S&P has been rating insurance companies since about the 1970s, and that really took off in the 1980s, about 15 years ago.

We have offices in major financial centers globally. The primary office is in New York, but we have offices in London, throughout Europe, Paris, Germany, Melbourne, Tokyo, and Mexico City. We have affiliated offices in South America and Asia. The rating side has about 2,000 people and the insurance side has about 200 people. There are about 75 people in New York, 50 people in London, and the rest scattered throughout the world.

I'm going to talk about liquidity, but it is just one part of the analytical process. There are obviously a lot of things that go into a review of an insurance company. Specifically, S&P looks at eight major things when it analyzes a company. Liquidity is one of them, but another issue of importance is management and corporate strategy. Where does the company fit in terms of its strategy in the industry? How well is management executing that strategy? What financial controls are there? What's the operating risk?

Our business review analyzes competitive advantages, how strong the distribution is, how strong the business is, what our view is of the company's growth in its various businesses, and how strong those businesses are. We also analyze operating performance, or earnings, to determine how strong and stable the earnings are.

Investments analysis examines the quality of the company's investments in terms of what assets they invested in and how well they are managing them.

For capitalization analysis, we look at the growth on an absolute as well as a risk-adjusted basis with our capital model, but we look at the quality of capital also. A/L management is more of a fuzzy analysis in that there's no specific model for it. But there's a lot of touch and feel that goes along with that, and obviously we're looking at the interest-sensitive companies more than any others.

Finally, we look at financial flexibility, which is how good the company is at accessing capital when it needs it.

Before I move to liquidity, just to show how everything fits in, I want to discuss the process that we use to rate companies. What we do is exchange information. We get information from the companies, five years of data, and then run our various models from the various questionnaires that we provide the companies. We then have a management meeting, which is usually attended by the senior officers of the company. We like to have a strategy session with the CEO. The chief financial officer is the key contact usually, and he or she is the one who would drive the process from the company's point of view and serves as the primary contact for providing information we need. We then go through the analytical process, which is qualitative and quantitative, back in the shop. At this time, we bring the company to a rating committee.

The rating committee, which is composed of five to seven analysts who are familiar with the company and familiar with the industry, then comes to a decision about the rating of the company. Is it AAA? Is it AA? Is it A? Is it BBB? If the company is not satisfied with the rating, it can appeal if it has new information to bring to the process.

We then go through the same process again to see if we're going to change our minds, which doesn't happen most of the time, and then we disseminate the rating. Once we've come to a decision, we disseminate the rating, and there are various ways we do that. We have press releases, our insurance book, the Web, CDs, and so on. Then we have ongoing surveillance. We look at the company quarterly and when events happen. We do a full review every year, but we may do mini reviews as things change in the industry and for the company.

Let's talk about liquidity. We have many models at S&P. We have a capital model, a liquidity model, and an earnings model. The models at S&P are not black box. There's no secret about them. We publish articles about them, and those articles are actually on our Web site, www.standardandpoors.com/ratings/insurance/ under the link for analytical criteria. On the list of articles, look for February 1999, Standard and Poor's Insurance Liquidity Model.

The liquidity model compares the redundancy of a life insurer's risk-adjusted liquid assets to its risk-adjusted liquid liabilities, subject to scheduled and unscheduled withdrawals. The model is an analytical tool like any other model. It captures what needs to be captured with liquidity. It's pretty simple but elegant, because it's just a cross-multiplication of the assets of the company—the exposure of the company on the asset side and on the liability side.

We have assigned various factors for the relative liquidity of the assets and the liabilities. In other words, we say a Treasury bond is 100% liquid, but real estate in a short-term scenario is not liquid at all, so we allow 0% for real estate. Let's say a 144(a) bond is somewhere in between, closer to the Treasury but not nearly as liquid. We assign factors along the scale of 0–100%.

This model was developed in the early 1990s when liquidity was a major issue in the insurance industry, as you may remember or may have experienced. Our model gets updated every few years. We did an update in 1999 which I'll talk about later. We try to keep up with what's happening in the industry. If commercial mortgage-backed securities (CMBS) becomes a popular asset class, and it's not handled by our model, we have to develop factors for it. If short-term GICs are a new popular product, we have to put that in the model. We have to meet anyway to talk about new products and new asset classes, and then look at what's happening in the industry. We look at what's happening in the world economy and decide whether we want to change our model. We change it every one to two years.

It's one of the few such models in the industry, at least as far as we know. We've been asked to speak about the model at places like this forum and, from what we gather, there are not a lot of models of its type out there. There are a lot of capital models. The NAIC has a risk-based capital model, and all the rating agencies have their own version of it. A liquidity model is less prevalent, and we've been using this model for about eight or nine years.

We've been asked to speak about it in Canada. I had a discussion with the regulators in the OSFI. They were looking at how to model liquidity and were curious to know how we did it. We've seen our liquidity model appear in presentations by our companies that are trying to show the industry how liquid they are, and it's been used in various forums.

In terms of the model itself, like any other model, it's imperfect. The factors for the assets and liabilities were developed on a relative basis. For example, as I said before, for the assets, we're starting off with Treasuries at 100%, real estate at 0%, and everything else being in between. We've developed relative factors considering those end points. The model assumes a higher redundancy of liquidity for uncertain obligations than certain ones. In other words, if you have a five-year GIC, and it's going to be payable at the end of five years, the model will consider that and we may still require redundancy, but it's going to be a smaller redundancy than we have for the uncertain obligations, such as a single premium deferred annuity (SPDA), where you don't know when it's going to come off the books. When we look at redundancy, we are going to require higher redundancy for those uncertain obligations.

Why this is important? The model is measuring the redundancy of the resources in the asset side against the needs on the liability side. If we have a company that's rated AA, for example, we're going to require a redundancy of resources. I didn't make that clear at the beginning, but let me make it clear now. We're going to require a redundancy of resources on the liquidity side because there is a cost to a high rating. And if S&P is coming out with a AA rating, we want to have a comfort level in terms of all of the various components of the company. Liquidity is obviously very important to the company and to our view of the financial strength of the company.

There is an implied need for redundancy of resources on the liquidity side just as you see on the capital side. We have our various capital ratios, and the higher rating you receive, the higher the standards are. For a AAA assessment of liquidity, it's 260%. In other words, you must have \$2.60 of liquid assets for every dollar of liquid liabilities, but then it goes down as you go closer to the BBB level. The higher ratings in general require greater expected redundancy of liquidity resources.

Here are some technical details about the liquidity model. We look at liquidity under two different stress scenarios, and the model is a stress test. How would the company perform under certain stress scenarios? We have an immediate scenario, and an ongoing scenario. The way we define immediate is, what assets are available to the company to pay off its liabilities in 30 days? Ongoing is over the next year. And the respective liability categories for that would be one year of liquid liabilities in the immediate scenario and two years of liquid liabilities in the ongoing scenario. Then we look at the more conservative of the two.

Obviously some companies are going to be stressed immediately if they have a lot of SPDAs that can come due at any time. If they're beyond the surrender period, that might be a major issue. On the other hand, ongoing liquidity is also an issue for companies that, although they might not have any liabilities that could come due right away, over time, they may not have enough liquidity resources. That's another way of looking at the same issue. We want to make sure that the company is well protected in both stress scenarios, immediate and ongoing, and when we assess the rating we're going to look at the more conservative of the two. We're using relative liquidity factors for assets and liabilities, and the model is a cross-multiplication of adjusted liquid assets compared to adjusted liquid liabilities.

In terms of how the model works, we take all the assets and segment them according to what they are. Let's say, from the top to the bottom, we have \$1 billion in Treasuries, and \$2 billion in corporate bonds, and so on and so forth down to real estate. We have our liquidity factors for those assets, cross-multiply those, and get an adjusted liquid asset number. We do the same thing for the liabilities, with SPDAs at the top, followed by life insurance, whole life insurance, and, on an on-going scenario, let's say, a less liquid liability. We then take a cross-multiplication of the two, and divide the adjusted liquid assets by the adjusted liquid liabilities. That division will determine the liquidity redundancy ratio and, at that point, we assign a characterization of liquidity in the usual S&P fashion, which is AAA, AA, A, and so on down the slippery ratings curve. Other factors—cash flows and other things that are part of liquidity management, and just our own view of the company's adeptness at managing liquidity as well as sensitivity to the issue—may come into play in the qualitative part of the analysis for liquidity.

We do have some standards, and that is that all secure insurers must have greater or equal to BBB liquidity. A company that receives a secure rating from S&P of BBB or above must have BBB liquidity on the model. AAA insurers must have A liquidity, which means that we have a higher bar for AAA insurers. And obviously if a company is rated AAA, and it has A liquidity, some of the other elements that we talked about earlier must be stronger to balance out the A liquidity profile. Every

company has a weighted average of various factors, but we do have a higher standard for AAAs, as well as a floor for all secure insurers.

We made changes to the model in 1999. The first is related to the global liquidity crunch that was experienced in August and September of last year, at which time we made a minor change to the model. Instead of all corporate bonds getting 100% credit, we changed that to 98% credit for single A and above and 96% credit in the immediate scenario to BBB.

We made that change after talking to our sister company, VRI, and the view was that assigning 100% credit across the board to all corporations that were secure was not taking into account what we saw last summer—that there was a time when even Treasuries were not as liquid, and corporate bonds definitely were not as liquid.

We incorporated that into the model, and it has a minor effect. There has been no change in the overall liquidity assessment for any company because of it, but in our mind it's a better model, and we've added some popular assets and liabilities such as CMBS and short-term funding agreements to the model. We liberalized the model to give partial credit to BBs. And, where we had said previously in our stress scenario that 100% of the SPDAs are going out the door, we lowered that to 90%. And there were a few other changes that we made in 1999.

In conclusion, from our studies and our rated population, most of the companies that we rate have liquidity of A or higher, and a lot of them have AA and AAA. Peter had asked me last year for a distribution, and at that time we had a distribution from a couple years ago that showed that most of the companies were highly liquid. Although some companies were on the edge, most from our ratings universe have very strong liquidity. As you know, the companies that we look at on an interactive basis are the stronger companies. Liquidity improved sharply after the 1991 crunch, which was the year we made the model. But, since 1991, when the real estate and junk bond issues hit, liquidity has improved sharply in the industry, and the ratios show it. Since 1997, the redundancy has reduced minimally because companies have gone to the less-liquid asset classes, so the ratios we're seeing are a little bit lower than those we saw before.

Finally, the liquidity model and all of our other criteria can be found on our Web site, www.standardandpoors.com/ratings/insurance/, under the link for analytical criteria.

Mr. Stephen L. Pontecorvo: It seems that most of the adjustments you spoke about were mathematical in nature. Is there any discussion with the insurance company about a liquidity plan or actions that they may take in a crisis situation, particularly with respect to things such as private placements where such a plan could be a critical issue?

Mr. Strauss: It depends on the company. If the company has liquidity at the lower end of the scale, we will talk about it. We have two insurers that have a lot of GICs, and, when you run the model, they're very close to the edge of the rating

category because of these liabilities. We then speak to them so that we can get a comfort level. We're still going to have our floor, but we want to understand how they manage liquidity. A lot of times we'll see that the companies that are close to the floor have their own way of looking at liquidity. They may not publish their models, but they will manage liquidity or have backup facilities that they can use. Sometimes they don't.

A few years ago, liquidity was called the hidden-risk factor. I think SOA had a session with that title, and some companies have no plan. We do have those discussions, and they range from "We have no plan; we really don't model liquidity; we just believe that it will all work out in the end" to "From our cash-flow testing, that's all we do, and that gives us a comfort level" to companies that have very specific models that may not have the same factors as ours does, but operate on the same idea. They look at the stress scenario and how they're going to manage that.

In terms of the companies that we've met with, some of them are very sensitive to the liquidity issue, and the difference between us and them may be the conservativeness of our factors versus theirs. In other words, they're looking to manage their business, and they're satisfied as long as they can manage it in a way that's consistent with their goals. And liquidity has a price to it. In other words, if you go into a more liquid asset, then you may lose some basis points. A company may be reluctant to do that. Therefore, in its model, liquidity may be sufficient, but in our model it may be low.

The difference between us and these companies is that we need to have a comfort level that there's that redundancy for the high rating, whereas they're not really managing to get the high rating; they're managing to have adequate resources for their business. But that's not enough for us because we're assigning a AA or AAA to them. We do have these discussions with our companies, and we hear various responses.

Mr. Thomas A. Doruska: My company is largely in the annuity marketplace, and our parent company pays very close attention to the S&P ratings. My question is somewhat of a blend of liquidity and A/L management. We know that you break deferred annuities into different classes based on the liquidity risk of the policyholder. I get to deal with immediate annuities. I don't think you do the same thing. You have immediate annuities as one class, and I'm a little curious about the logic you're using. Clearly, there isn't any excess liquidity risk. The person can't go anywhere. It's an immediate annuity. Frankly, ours are also somewhat short—5- and 10-year certain period. I see no difference between certain period and life contingencies. I hope you can talk about whether there's anything on the forefront, maybe in 1999-2000, that will get you to take a closer look at immediate annuities to try and see the difference in liquidity between those, much as you have done with deferred annuities, or at least as I see it as it comes down through me from a pricing perspective.

Mr. Strauss: The model says if there's no surrender allowed, it would just fall into the bucket that has a 0% factor. If it's a situation where there is a factor, I could

talk to you. When I get back to the office give me a call, and I could see specifically about the annuities that you issue. We do review the model from time to time. Our companies are not shy about pointing out what they consider to be inconsistencies in our model. We're also not close-minded enough to never consider anything. In terms of the specific issue, we can handle that off-line, but if there are no surrenders allowed, then it is a 0% factor, which means that it would not be included in the requirement for liquid liabilities.

Mr. Tilley: If I could just interject something, isn't there a small adjustment for any liabilities of known quantity that are maturing within a year? Don't they have to have a special calculation?

Mr. Strauss: Yes, if it's very short term, in one or two years, then there's something in it for any maturities at all that are coming in the next two years. But if there's no surrender allowed, and they're not maturing in two years, it should get a 0% factor.

Mr. Max J. Rudolph: I was wondering if you could discuss whether you're viewing liquidity as cash in versus cash out or assets versus liabilities? Essentially, I'm wondering what you're doing with the premium.

Mr. Strauss: We're not giving credit for the premium. In other words, we want the company to be liquid from its asset side, and we're going to assume that, should there be a stress scenario, the premium inflow is not going to be the same. It may be severely curtailed from what it is currently. We will consider it in terms of the qualitative view. If there's a lot of contractual premium that has to come in no matter what, we may give some credit for that, but in general it's not incorporated into the model.

Mr. Rudolph: To be consistent, then, do you also drop off all the claims from group-type products and for individual major medical-type business, since most of that is current-year claims being paid based on current-year premium being received? If I sell you an individual major medical policy, you give me premium today and I pay out claims to you this year. What I think I'm hearing is that you're including those claims as a cash out.

Mr. Strauss: Right.

Mr. Rudolph: But you're not including the premium that I'm collecting during the year as cash in.

Mr. Strauss: Yes. What we saw from the companies that had problems in the early 1990s was that there were issues. That is a more conservative way of looking at it, but that is actually the application. In a stress scenario, we're going to assume all the liabilities are still there, but we're not going to assume that everything's coming in. That is the way the model is constructed, and that is our view. And, in terms of stress scenarios, it's our view not to take any rational view of how people are going to approach the market. What you saw at the companies in the early 1990s, when people were lining up at the door of certain insurance

companies, is that regular company operations were disrupted in terms of premium income and in terms of people who owed to the company, but there was no freeze on the expectations from the company. That is the way the model is constructed.

Ms. Marilyn Dunstan: Could you discuss the approach to funding agreements in your recent changes, especially regarding put features?

Mr. Strauss: The funding agreements are handled as GICs. If there is a put option in the contract, we assume that it will be put; in other words, we're going to take the view that it's a current-year maturity. Peter mentioned that we have maturities in the coming year, and that's a liability that the model will incorporate. We're going to assume that, if it has a put, it will be exercised. Now, there are various gradations in terms of how the put is handled. I didn't go into the detail, but for fixed obligations we have a 15% redundancy factor, maximum, and that was actually lowered from 25%. If you have a GIC that's not benefit-responsive and has no put option, there's actually a 0% redundancy. On the other hand, if it's not benefit-responsive and there's a put option, we draw the line at 60 days. The highest redundancy factor is for a case where there's a put option of 60 days or less. That would be the 15% redundancy factor. If it's more than 60 days, then it's actually 10%.

Ms. Jane E. Kinney: I'm going to be approaching things from the business-control side and talking about liquidity risk management. I'm talking about it from the perspective of a former auditor, a consultant, and an accountant, so it's a different perspective from what you're used to.

To start off, my definition for liquidity is a very basic definition. Liquidity is the availability of funds or the assurance that funds will be available to meet all obligations and commitments when they fall due. And when you're looking at liquidity from that perspective, we have to consider both on and off balance sheet outflows. I'm going to talk about that liquidity from an operational standpoint as well as from a strategic standpoint.

Cash outflows are generally funded from cash inflows in the normal course of business, supplemented by assets that are readily converted into cash or through the company's ability to raise funds. The risk of illiquidity would obviously increase when cash flows relating to assets and liabilities are mismatched.

What we're talking about here when we talk about risk management around liquidity is just making sure that there's a program in place to ensure that there is sufficient liquidity to meet your ongoing commitment. It's a program that usually would include things like adequate policies, procedures, techniques, models, and information systems that would all help you manage your liquidity on an ongoing basis for both your short-term and your long-term needs. We're talking about a complete, comprehensive program.

I'm going to talk about some of the key control processes that you should expect to have in place to manage your liquidity needs on an ongoing basis. The main thing to ensure that you wouldn't be forced, in the event of a liquidity crisis, to have to

raise funds at unreasonable prices or premiums in the market or have a forced sale of assets. You want to manage your liquidity to avoid those scenarios.

What are the benefits, and why should you be focusing on a sound liquidity risk management program? It's interesting that a lot of insurance companies in many cases haven't focused on liquidity risk management directly. The main reasons to have a sound program are to make sure that you can honor all your cash outflow commitments on a daily and an ongoing basis, avoid those excess funding costs, and, in some cases, satisfy statutory liquidity requirements. As Peter said, my practice area focus is in Canada, and some specific standards of sound business practices for life and health insurance companies have been established to deal with liquidity management. I'm going to talk about those standards of sound business practices because they're certainly applicable to your own organizations. In short, basically managing liquidity is fundamental to ensuring the safe and sound management of your company. We're talking about the actual viability of companies.

The federal regulator in Canada, which is the OSFI, has recently issued standards of sound business practices covering a wide range of areas for life and health insurance companies in terms of risk management standards. The standards are very focused on risk. They're not focused on detailed control procedures that companies should have in place, and they are very much higher-level policy-type standards. Of the 10 standards, six are related to the investment area, and they deal with typical interest rate risk management, foreign exchange risk management, credit risk management, and security portfolio risk management. There is also one standard on liquidity, which I'm also drawing some of my background from.

Managements have to assess their business practices against these standards and report annually to the regulator. And it's not only Canadian companies; American companies with branch operations in Canada are also subject to this regulatory requirement. All branches in Canada have to go through this process. And the federal regulators in Canada don't care if companies are already regulated elsewhere, in many cases, quite stringently. They will allow companies to make their case if they are regulated and feel that the regulatory regime is comparable, but in no cases have they actually agreed to let the regulatory regime from other countries hold sway in Canada.

This was the first year of implementation, and the first filing was February 1999. There's a lot to be learned from it. In addition, there are specific guidelines for liquidity management set for banks and trust companies, drawn on the information for the life and health companies, as well as for the Canada Deposit Insurance Corporations. They also have standards of sound business practices. They also have a standard relating to liquidity management, which is very similar to the requirements that apply to the life and health insurers. In fact, that was the root of this standard.

For the companies that actually went through this whole process for the first time in 1999, one of the things that I found from consulting to a number of them is that,

not probably too surprising from your standpoint, there are very structured A/L management processes in place in almost every organization. And the investment policies themselves have been very well crafted in the last few years. They are comprehensive and prudent. They deal with limit monitoring, escalation procedures—all aspects of a well-rounded investment management policy. But the policies, in many cases (and I'm drawing on fairly well-known, significant companies), don't specifically address liquidity management considerations, which is somewhat consistent with what we heard from Neil. I'm not sure why that is. People must feel that, "We're doing well, so the money will just keep coming in the door," but the liquidity management considerations do not seem to be well spelled out in policies in most organizations. That's not across the board, but it was one of the things that was found through this self-assessment process.

Liquidity risk management itself was not seen as a principal consideration of A/L management at all. It was not seen as another area where the standards require an internal audit review of management self-assessment. In other words, management says, "Yes, I do this or I don't do this," and then internal audit affirms that whatever management has said is accurate and that the policies it says are in place are really in place. The other thing we found through this process in the first year was that internal audit groups, generally speaking, have not put a lot of effort or a lot of focus into looking at how companies are managing liquidity. What are their policies? What are their programs? And what do they have in place? Those were two gaps in the self-assessment process that were discovered by a lot of the life companies that went through this process. Many of them have action plans in place to develop standard policies that will require ongoing reporting to the board, and I'll talk about some of the things that are required going forward.

The other thing we found is that a lot of the policies that life companies do have in place do not specifically address contingency plans. They don't address the stress scenario testing in terms of what plan should be put in place in the event of a crisis. And that is one of the specific requirements of these standards. If you are going to manage your liquidity on a prudent basis, one of the things you should be doing is stress testing, running your various scenarios, understanding what the approach is in a crisis, and actually documenting the plan.

In terms of policy requirements, one of the key pieces of the standards of sound business practices is that there should be a well-defined liquidity management policy put in place. And, as a minimum, that policy should establish that there are effective techniques to monitor, measure, and control the liquidity requirements and position. Companies need specific policies around those three aspects. The policy itself, as part of the standards, must be approved by the board of directors. Management should recommend the policy, and the board of directors should approve the policy. In some cases it may be wrapped up with the standard investment policies that are well established in most companies and have already been through the board.

In addition, these standards require that there be at least annual reporting to the board on the adherence to the policy. You have to put a written policy in place that is comprehensive and then report annually to the board about compliance with the

internal policy. In addition to that, the policy should outline who has specific responsibility for liquidity risk management. In many cases, the first time through, at least with the Canadian companies, nobody had direct ownership, responsibility, or accountability for liquidity risk management.

The policies themselves should also be setting out the sources and amount of liquidity required to ensure continuity of operations and to meet all applicable regulatory requirements. The policies, as I said before, should also have both an operating view as well as a strategic view. Operating liquidity is your day-to-day cash outflow. The time horizon that's specifically outlined in these standards for monitoring your day-to-day liquidity is about a month. We're talking fairly short-term, but even then it depends on the nature of your operations. A month may not be appropriate, but that's what's outlined in the standards.

Some of the factors that should be considered are the level of mismatch between your current A/L cash flows (factors that should be built into your cash-flow prediction model), and any unrealizable cash flows resulting from mortgage renewals and defaults. In other words, you have to have some experience or history to be able to come up with good estimates for those items. You should also consider other liability requirements, such as death claim settlements and withdrawals prior to contract maturity. Again, you need some experience and background to be able to monitor those adequately, or at least effectively. Finally, you have to consider other commitments, such as reinsurance settlements or capital purchases.

There's nothing very difficult for you in putting these things in place, but it was surprising how few companies actually did have well-defined, robust models. In some instances, modeling is only being done from the rating agency perspective. In other words, you know specifically what the S&P model is, and a lot of companies are trying to run those numbers internally so they know where they stand. But that's an entirely different purpose than running the model to manage your own liquidity and your own organization better.

Also when looking at operating liquidity, you should look at your various funding sources and consider liquid assets, lines of credit, premium income, and other borrowing. Again, some of the things that you would consider internally in your model may not be considered for external rating purposes but it makes absolute sense from a business point of view to examine your real operating liquidity.

In terms of strategic liquidity, we're talking about the longer-term obligation, which makes sense given the longer-term nature of the insurance contracts. The types of factors to consider are broader factors surrounding economic and market conditions. What will happen if there is a meltdown of Internet stock? for example. And what impact will that have directly on you? These are the types of factors that should be built into your model: the regulatory and political environment, consumer confidence in the life insurance industry, the strength of your own company, its ability to borrow in various scenarios, and your management strategy. All of these things should be specific assumptions with specific scenarios that actually look at your liquidity requirements.

In terms of internal controls that should be required, every company should implement effective and comprehensive procedures. Policies and procedures are a must in this area; you can't just leave it to chance going forward. In fact, the genesis of these standards themselves came from failures. Confederation Life in Canada was the prompter of these standards of sound business practices. The regulator feels that if every company had these well-defined, prudent standards in place that we would be able to avoid failures in the future. Interestingly enough, Confederation Life had a very high rating-agency rating very shortly before it collapsed. Obviously, it didn't have the sort of well-managed, prudent policies in place that we're talking about here.

In addition, information systems are a must to help you produce the information to for conducting the modeling to manage liquidity on an ongoing basis, because very complex factors need to be built into it.

This is not an area where most companies internal audits have really spent much focus in most companies in the past, and in Canada it's now a requirement. Companies will have to spend some time looking at liquidity management within their companies. And, again, it's perfectly applicable in other jurisdictions.

Internal audit will be a key element in managing and controlling the liquidity management program, at least in terms of providing input into the policies. Are they appropriate? Do they consider the normal control processes that you'd expect? They also will, hopefully, provide some comment about the information systems by verifying their accuracy in producing the information that's needed to manage your program effectively.

I mentioned before that generally these policies or these standards would be approved by the board of directors. Management should be recommending and drafting the policy. These standards require that the board of directors review and approve the liquidity policy based on management's recommendation. There's an onus on these boards of directors. But there is a move by the regulators to pin a lot more responsibility on the directors, and this is one way of doing it. There are specific requirements for the board regarding these standards, and the regulators have gone on record that if, in fact, the companies are not following the standards, there will be sanctions directly. And then, if there are failures, the board members will be one of the first ones to be sued in terms of the changing litigation environment.

The standards also require that the board review the liquidity management program at least once a year. Most of you, if you've prepared anything for boards in the past, would have well-defined policies on investment standards in terms of where you stand, and you'd be providing quarterly board packages or whatever. One of the things that we'd expect to see in the future as part of that package would be reporting on liquidity management versus the policies, similar to your other standards.

The board also has the responsibility to ensure that internal auditors review the liquidity operations to ensure that the policies are being followed. The board will

actually make sure that that happens as well. It has responsibility to ensure the selection and appointment of qualified people, that those responsible are identified, and that they're qualified to administer the liquidity management program. The board also will be outlining the content and the frequency of board reporting that it will require. In the past, I would say, generally speaking, most boards would not have gotten too involved in liquidity management.

The standards are very specific in terms of management and board responsibility. They also outline the responsibilities of the appointed actuary. In terms of managements, their role is to develop the policies to recommend for board approval, implement the liquidity policies, ensure that they're managed and controlled within the program, and ensure that the development and implementation of appropriate reporting systems takes place. This is all management's responsibility: to put the program in place, put the monitoring in place, put the reporting program in place, and then establish a method for accurately measuring current and projected future liquidity.

Managements would also have to monitor the external factors that have an impact on a liquidity management program, make sure that internal audit completes its role in reviewing this area, develop lines of communication to ensure that everybody understands what the policies are, and report comprehensively to the board. These are pretty specific requirements for establishing a liquidity management program, with specific accountability for both the managers and the board of directors.

In closing, I think we are going to see a more formal approach to liquidity management in many organizations, if it hasn't already taken place in your organization. There is a fair bit of literature available now detailing what should be in place in a well-run liquidity management program. Obviously, you can't isolate liquidity management from your other risk areas. If you have currency requirements, you have to model liquidity in your various currencies and consider the foreign exchange risk relating to that. It obviously has an impact on your interest-rate risk as well, and all of these things really can't be looked at in isolation, as I'm sure you would understand.

In summary, if you don't have a liquidity management policy in place, I would suggest that it's time to develop a more comprehensive program. If you aren't going through the stress-testing scenarios for liquidity management, it is a prudent thing to do. Certainly, if you haven't looked at it from a regulatory standpoint, that would be an obvious place to start, in terms of knowing what the regulators are looking at and developing an internal program, to be able to respond to the regulators.

Mr. Timothy W. Verscheiden: You stated that A/L management doesn't sufficiently address liquidity. What shortfalls do you see? Do you feel companies are overemphasizing something relative to liquidity, or do you just think something else needs to be done?

Ms. Kinney: I was talking about my experience in working with companies. The A/L management policies of most organizations are complete and comprehensive, but they don't necessarily address liquidity management specifically. It's just something that people think of as understood or something that will naturally fall out, and I'm not really sure why that is. It's really more an observation that it doesn't seem to be addressed specifically and probably should be to meet the standards that I'm talking about.

Mr. Frank S. Irish: I'm a retired actuary. I remember in 1980 and 1981, there was a major liquidity crisis in the U.S. I think if you went back and looked at the financial statements of most companies, you wouldn't even know it had occurred, but there was panic in the board rooms at that time. I think that in many cases it was met by, for example, selling GICs at rates that could not be supported by what the company was investing in, and in that way at least the cash flow shortfall was met. But if it had gone on for many more weeks, this could not have continued. This raises in my mind the question of whether the whole liquidity matter shades off into modeling of the sale of assets and the possible raising of assets in a crisis. Your definition said we don't want to put ourselves in a position where we have to sell at an unreasonable price, but really it's a continuum, isn't it?

Ms. Kinney: Yes.

Mr. Irish: You have to look at, for example, your surplus and whether a real crisis can eat up all your surplus. Liquidity is not a matter of having it or not having it. It's a question of how much you have and the degree to which your surplus will be eaten up in a crisis. I had one other part to this question, too. It used to be that there were provisions in contracts for delaying payment in an economic crisis. I wonder if these still exist and whether they affect your view of liquidity. There used to be a six-month moratorium that was possible to claim.

Ms. Kinney: That I can't answer. Maybe Peter can.

Mr. Tilley: Yes, I'd recall certainly from my own company's contracts that we have that six-month proviso, but I think the feeling is that, if you ever try to enforce that, it creates a run-on-the-bank scenario. I think it's a false crutch. And my other comment on your question before Jane gets a chance at it is that, in a crisis situation, it depends on whether it's your company's crisis or an industry crisis or an economic crisis of the U.S. or the entire world. Maybe this isn't very actuarial of me, but I've always felt that the world meltdown and nuclear war crises aren't something that we can ever plan for and adjust to. From a company crisis standpoint, we've certainly seen those. We saw Confederation and Mutual Benefit. There's a presentation, Session # 61PD, going on at this same meeting called "Insurance Company Failures of the '90s: Have We Learned Anything?" and there is mention of liquidity in that presentation. It's a topic that isn't necessarily all that hot and current, but it sure would have been back in the 1990s, and it may be yet again.

Ms. Kinney: On your first point, again, I think the idea of a contingency plan is very prudent, and when you think about your sources of funds, a plan should be

such that you have your first level of defense, your next level of defense, and then your next level. And, obviously, you're going to move down to selling assets, even if they aren't at beneficial prices. Your plan should be pretty clear in terms of what your response is in view of a crisis. You should be testing that, it should be documented, and everybody should understand the protocol. That's just good business management.

Mr. Bruce D. Sartain: You mentioned that there were some liquidity responsibilities for the appointed actuary as well. I was wondering if you knew what those were or what the general guidelines were.

Ms. Kinney: In the standards, there is a rule for the appointed actuary, but the standards don't specifically give the appointed actuary responsibility over liquidity management, interestingly enough. That rule is much more on the traditional liability side in terms of requirements for valuation and product pricing. It doesn't deal directly with liquidity management.