

RECORD OF SOCIETY OF ACTUARIES 1995 VOL. 21 NO. 1

STUMP THE EXPERTS

Moderator: FREDERICK S. TOWNSEND, JR.
Panelists: LINGDE HONG
 PRAKASH A. SHIMPI
Recorder: FREDERICK S. TOWNSEND, JR.

A panel of investment experts will answer investment-related questions from the audience.

MR. FREDERICK S. TOWNSEND, JR.: I'm with the Townsend & Schupp Company in Hartford, CT. We issue private credit ratings on life insurance companies and also do life industry research. Prior to that, I was a general partner in a member firm of the New York Stock Exchange for 25 years.

MR. PRAKASH A. SHIMPI: I'm now with Swiss Re, but I was in banking for about ten years, and I spent the last five years at Chase Manhattan Bank, where I was responsible for asset/liability management advisory and derivative transactions that were done with insurance companies. I am establishing a new company at Swiss Re, which we're calling Swiss Re Financial Products. We want to see if we can develop a market to trade insurance risks, as well as cover some of the financial risks that insurance companies may face.

MR. LINGDE HONG: I work at John Hancock and our department is called investment policy. Our job is basically to establish investment policy for different lines of products. I am responsible for long-term-care products and I'm called a portfolio coordinator. I'm responsible for bringing the asset people and the liability people together to establish investment policies. Most of the time, it boils down to asset allocation. We moderate our investment policies and make changes when they are needed. I took the finance track exam, and am one of the first possible finance FSAs.

MR. TOWNSEND: Would anybody like to start with a question about investments?

MR. PAUL A. HEKMAN: You are looking at investment policy for long-term care. I'm wondering if in addition to traditional duration analysis, what an appropriate investment horizon is, for that type of product when you're getting into a new line like that.

MR. HONG: Yes, actually tomorrow, I'll be doing a presentation on long-term care on investment policy. The process we have followed in this particular case is to do a duration calculation over the yield curve for long-term-care products first. Indeed, they're very long. They are anywhere between 10 and 15, but our feeling is that's probably not a solid number just to go to make a decision. So we did a set of stochastic projections, with 120 scenario runs and compared the results. Also, we identified the main risk in terms of the investment for long-term-care products as a low interest rate environment.

FROM THE FLOOR: Reinvestment risk?

MR. HONG: Yes. During the first 10–15 years of selling this product, you have lots of cash inflow, and much later on, cash outflow. So during those first 10–15 years, interest rates are extremely important. They basically determine if you will make or lose money. So that's a very interesting discovery. Depending on different products, we come to the

conclusion of anywhere between 10 and 20 years of average life for different long-term-care products.

MR. SHIMPI: Let me generalize the specific example that you've mentioned. The general issue is, for any liability, when you use a duration methodology, how reliable is the duration? If you're looking at shorter horizons, then you have a better comfort level, because you're arguing whether it's a two-year or three-year duration or something of that order. But even then, it's not a precise number. And if you subscribe to the theory, then the theory requires precision in the duration matching. As you look at longer-term business, then having that imprecision just becomes impractical and unacceptable. So, the only alternative is basically to come back to the roots of the profession to do an analysis on a scenario basis. The question that that begs is, how many scenarios are enough? There are all kinds of things being done to try to define state spaces that cover the universe of possible events and so on. But ultimately, you have to get down to a number of scenarios that are practical for you to look at in detail. Then you can come up with the conclusions that you just did, which is that these are the types of environments where we stand to lose money and these are the types of environments where we tend to make money. But I think it's a caution in some cases, where there's been a blind acceptance of the duration methodology. It doesn't have to work in every situation. And you should always have some alternates.

FROM THE FLOOR: Even assuming that you have information on cash flows of liabilities, what value do you think there is in the duration methodology?

MR. SHIMPI: I'm not a great believer in the duration methodology, so my answer is loaded in that direction. I think having the cash-flow precision is one thing, even if it's not interest-sensitive and I have a series of cash flows. My real question, even in those circumstances is, how do I discount the cash flows? To use the duration methodology, I need a price process. And I need it to be a twice differentiable price process to get the duration and then the convexity. And just having the cash flows doesn't necessarily guarantee the price behavior. Now, if you have a way to come up with the price, then fine. It must be a verifiable price. People sometimes point to the securities market. Take the case of a mortgage-backed security, which does have interest sensitivity. People do come up with a duration number for that, and they have all these pricing models. How come they can do that for mortgage-backed, and you're not willing to do that for a simple class of liabilities? I say that when bankers calculate duration, they hypothesize. They figure out some model and they'll attach various coefficients to the various parameters in the model, and then they check that model against the price in the traded markets. If it matches, then they know they have a decent model, and if it doesn't, they'll modify the model. Unfortunately, we don't have that luxury with the liabilities. You may certainly be able to guess a price, from point to point, but you may not know that process with a great deal of certainty. Therefore, it throws the whole duration approach into a little bit of a tight spot. But that's my opinion.

FROM THE FLOOR: I have a question on the scenarios. We do a lot of that type of work in my company and we try to determine what the asset allocation should be. One of the things you quickly discover is, if you set things to be arbitrage free, there's no advantage to buying a ten-year security over three months. This leads me to immediately conclude that everybody is wrong, I should only buy a three-month Treasury, or there's

STUMP THE EXPERTS

something wrong with arbitrage free, for the problem of asset allocations. If you've come up against this, how did you manage to resolve it?

MR. HONG: I could tell you that part of the process. We used 6-30-94 yield curves at the time we did the projection. As in most instances, you have a yield curve of normal shape, which means that if you use arbitrage free as a base concept, then you're going to have problems doing this. The conclusion we drew was (based on the study) to turn off the arbitrage-free condition. In other words, let all the yield curves rise and fall. There are two reasons to it. We think the strategies we're comparing are relative strategies. So even if, in the world of not arbitrage free, conclusions are logical as long as one strategy is always better than the other. Then we should use the strategy that is better. Now, there's a second situation in this case; that is, let's just put it in this programming kind of term. If you turn the arbitrage-free switch on, you will have yield curves generated with an upward drift, which has advantages such as bias toward a long-term product. In other words, if we assume a price at 10% and the curve is drifting up toward 11-12% in the futures, you're priced very conservatively, so you are artificially making the business look better.

FROM THE FLOOR: What we've experienced is, if you do a 20-year projection, the arbitrage-free curves that exist after ten years are all flat.

MR. SHIMPI: Actually, there's another consideration. I'm going to move a little bit away from this and take one more step back. What is the motivation in establishing the arbitrage-free argument? And does that argument apply to securities pricing equally or does it apply just as equally to asset allocation and, therefore, strategies in the market? The arbitrage-free pricing for securities gives me a basis for saying that this price is the right price, because I can replicate this security by using some other instruments that have this price. Therefore, the two have to be priced equally and that's what we have. So that's the motivation at the security level for doing the arbitrage-free pricing.

When you get to asset allocation, you're now talking about strategy. You can say, "All right, I have a price behavior or price function for each of my securities in the portfolio. I now want to shock my price behavior through time. I want to shock it uniformly, so that each of my securities experiences the same externality. Then I must figure out how they behave." Do I necessarily have to have the yield curve or the yield curve path generated over time to conform to some of these very specific, restrictive assumptions that I'm forced to make in my pricing models? I'm not entirely convinced that you have to. Just for the same reasons that Lingde came up with, with some of the anomalies you come across, you turn off the arbitrage-free switch.

FROM THE FLOOR: Do you do that kind of modeling?

MR. SHIMPI: I'm sure somebody has. It's been a long time since I personally did any of that detailed modeling for the option pricing. Most of the work that I've been doing has been on asset allocation and securities purchasing. Seven or eight years ago, when I was doing that kind of modeling, we hit problems with interest rate generators. Also, they weren't as sophisticated eight years ago as they are today. Even then, the problem that we had was one of consistency in looking at how the path gets generated and how to define arbitrage free. A lot of work has been done since then, and I probably can't add more

than to say that it was a problem that was there, not one that I solved then, but which probably has been solved now.

But another important thing that you've all brought up here that we faced at Chase Manhattan is managing the risk for our derivatives book. We needed to figure out the *value at risk*, which is the term that we used to manage our derivatives business, and therefore, the rest of the firm. Senior management wanted to know for every division what the value of the firm at risk was in its line of business; not only exposure, but more. We defined the term, value at risk. In defining it, one of the things that came up was the question of under what scenarios we were measuring risk. It's not a black and white thing. If I took a series of scenarios, and I present-valued the various effects, weighted them accordingly and so on, I would get a value. If I use another set of scenarios, I get another value; under some scenarios, I'm OK; under others, I'm not. So how do I generate scenarios? I don't care whether they're arbitrage free or not. The question is, if this happens, what happens to me? Then the next question is, what is the *this* that can happen? They tried to generate all kinds of curves and paths. We had so many people working for us, and everybody had a different opinion on what the right solution or the right path was. Ultimately, I think we came up with a very nice compromise. They agreed that all our models would generate some information.

But in addition to these models, we're going to have a reality check. The reality check is to look at our portfolio of assets and liabilities (because we're a trading organization with a shorter time horizon, we will go back 100 days) and study the price of each of these over that time. We don't have to worry about the correlations between the markets because those are the exact prices that these instruments had. So we know that these prices can occur at the same time together, whatever the models may tell us. It can happen or not. We have the luxury of going back 100 days and repricing the portfolio as if the last 100 days occurred again. Could we survive that? This is just an illustration of how to get a practical addition to the simulation exercise. We may not be able to do this with some of our insurance products because 100 days is not enough time.

FROM THE FLOOR: What about picking the crash of 1987?

MR. SHIMPI: That's exactly right. That, too, is an element in deciding which 100 days to use. You can always pick the 100 days. Certainly, you can add those types of dates as well as other dates. But on an ongoing basis, you figure that if you can survive whatever happened in the last 100 days, and you're looking at this on a day-to-day basis, then you're OK. (At least the company is looking at it on a day-to-day basis.) Most of the trading houses do something similar. All the major houses that deal in derivatives, if not other securities will do something similar. They evaluate their position and if they see that things don't move their way, or if certain things happen over a 24-hour period, they are still in business. There is a much longer-term problem with the insurance companies.

FROM THE FLOOR: I was going to try to change the topic because I work for a life insurance company and we've noticed that our universal life (UL) policies haven't really experienced much change in our persistency, and our lapse rate, even with interest rate changes over the last three or four years. Can you comment on what the industry experience is there?

STUMP THE EXPERTS

MR. HONG: It's listed how much surrender charges are for that UL business. I suppose different companies and different pieces of business would have different experience.

FROM THE FLOOR: If most companies' products are back-end loaded, if they're in the first five years, their surrender charges will be significant. But we assume that even with those surrender charges, we will see lapsation if interest rates go up.

MR. SHIMPI: There are a couple of conclusions from that. One is that it's case dependent. It depends on what your distribution channel is. If your distribution channel is a hot money channel, a bank, for example, then chances are that you probably would have experienced higher lapse rates. I don't know what the actual experience is for bank products. But the presumption is that if it's a hot money distribution source, then that's the kind of experience that you might get. On the other hand, if the agent is selling this to people whom he or she has done business with for many years, and he goes over to the house and sells the policy and makes the protection arguments, then the investment aspect may well be a secondary issue in addition to the protection issue. In that case, you will not experience such high lapses. But it also speaks to one additional thing, which brings us back to the pricing issue and the modeling issue. We don't know, so we have to make our best guess. When you try to get a price or market value on a liability, or a book of liabilities, and you can have this tremendous variation, how do you allow for that in a duration number? There's no margin that you can put in a duration number for this type of variation. Therefore, it may be that the only technique that can help you is a scenario analysis where, in addition to having multiple interest rate paths you throw in another dimension of variation. You have a range of possible lapse behaviors as well, just to complicate things and give the computer people more things to do.

MR. TOWNSEND: I guess I might ask, to whom are you selling your UL products, and are they bought by the policyholders as investments? I note that in many single-premium deferred annuity (SPDA) companies where people are buying the product as an investment, there's a reluctance to surrender if there's any surrender charge, even 1% or 2%. I would rationalize surrendering at that rate or even higher under certain conditions, but I think people who buy products as investments rather than insurance products are very reluctant to accept any charges and will wait out the surrender period. Then they might have surrenders. Also, I use the word *lapse*. What do you call a lapse? Is it total surrender of the policy? Or does that include nonpayment?

FROM THE FLOOR: A lot of UL policies will have nonpayment of premiums in them.

MR. SHIMPI: Right. So keep what's in there and put the new money in a certificate of deposit (CD) or something else, but not in another insurance policy, because then it gets the double hit on the term cost.

FROM THE FLOOR: There's a lot of overhead on exchanging a UL policy. You have to go to your agent and to your doctor and get your physician statement and such.

MR. SHIMPI: Right, to replace it. That's true.

MR. HONG: I can't agree more with Mr. Shimpi's comments on pricing options from liability because in reality, when you price the asset side of options, you can do a reality check, even though it's not 100% accurate. There is something you can do about your

RECORD, VOLUME 21

interest rate model with it, but on the liability side, it's very difficult. You might have priced in a surrender charge, thinking that it's protection against the surrender option, but it's difficult to judge if you've overpriced or underpriced an option. If you want to do an interest rate scenario with the action, all the assumptions that you made tend to become very crucial. It could be sensitive to your assumptions regarding interest rates.

FROM THE FLOOR: Back on the subject of interest rate generators, will one of you comment on the appropriateness or lack of appropriateness of using a lognormal distribution?

MR. HONG: I have not done much work in that area. I think lognormality has been used as an interest rate generator but in reality, is this a model, a stochastic log model itself, or is it just a log model with fixed parameters? Parameters are following stochastic process. Therefore, you cannot really call it lognormal.

MR. SHIMPI: I don't think I can add anything more except to say that it is the most commonly used. When you say that you model with normal or lognormal, what does it really mean? There are some interesting questions there. What elements are you projecting? Is it a one-factor model? Is it a two-factor model? What are the factors you're looking at? Those are the kinds of questions that you ask as well. In general, the lognormal distribution seems to do many things that are desirable of an interest rate process.

FROM THE FLOOR: Recent actuarial literature suggests that the approach has tails that are not fat enough. Some other methods have been suggested.

MR. SHIMPI: Maybe it's worthwhile taking a step back and thinking about what we're trying to do when we use a distribution. Basically we're trying to find a representation and a fairly tractable, and I stress the word *tractable*, representation of reality.

You want a model that has sufficient theoretical work done and that appears to be a reasonable approximation of reality. Now somebody may have another distribution that has the same amount of literature on it, some other stochastic process. By all means use it. It's really just trying to find something that you can use and understand its limitations. That's the real key. If you think that the tails are too fat, well, fine. We know the tails are too fat or not fat enough. Adjust your projections accordingly.

FROM THE FLOOR: Coming back to asset allocation strategy, if you find one that's good or is better than the next strategy, obviously, this must have something to do with the risk-return relationship. What's the risk? How do you measure that? What do you count? And what's return?

MR. HONG: That's an extremely interesting question. With a long-term-care product, you're saying it's a long-term product. Many things are not directly related to investment return. During the next 10-15 years, many things could happen. People are quite focused on the claim experience. There are regulatory issues. When everything gets put into the model, there is a common definition of risk as standard deviation. In many cases, you can use surplus value or asset value if you think liability value is fairly level; that is, if liability value is not extremely interest sensitive. But relative surplus could be estimated as a relative asset. In any case, relative surplus value can be used in comparisons.

STUMP THE EXPERTS

FROM THE FLOOR: Surplus along each path, and you look at the standard deviation scenario by scenario.

MR. SHIMPI: I'd look at it a little bit differently. That's certainly a technique that is used, and it is a powerful technique. I use something slightly different. Do I have another three hours? Yes? Can I get into it? I define a return on the liability. Let's say I do a multiple scenario, multiple-horizon projection. The scenarios aren't limited to just interest rates, but I'll take into account how the parameters vary as well. Then I look at the cash flows that are required to service each of the liabilities under each of these paths, at each point in time that I'm interested in. I also look at some values. They may be statutory values, GAAP values, or some broad market values at each of these points in time as well. Then, looking at the asset portfolio, I ask how hard the assets must work to fund the liability. I derive a return number based on what the liabilities need.

Here is a simple example to illustrate this. Suppose I'm looking at one horizon and one scenario only. In this scenario and horizon, I need \$5 in cash to pay out for the liabilities at the end of the period, and I need \$105 in value. That \$105 value is a judgment. It's how I want to manage the business and what I want the assets to perform to. It could be statutory. It could be GAAP. It could be some mix of these. I have a whole definition of hybrid values, but I don't want to get into too much of that here. Suffice it to say that there is a value that I'm managing the business toward. So now at \$105 in value and \$5 in cash, I need \$110 from somewhere. I don't really know what the market value of the assets or of the liabilities were at the start of the day. I'm not going to even bother with that. In economics terms, I need some numeraire, something to base the growth on. So I will look at the assets and say that I have an asset portfolio worth \$100 at the start. Then I can decide, again for management purposes, how much weighting I want to give to market value versus book value. Once I've decided that's what I'm going to use, I use a hybrid value, maybe marked to market value for certain assets and book value for other assets (to tackle the FAS 115 issues).

Let's say I start with the value of the asset at \$100. I have to generate \$110. Therefore, the required return is 10%. I have some distinction that I may want to draw between cash needs and value needs as well. But for now, assume that I'm not drawing that distinction. So the required return is 10%. Then I look at the assets and ask, under this scenario, how much do the assets actually produce under my pricing models? I subject the assets to the same scenario horizon and I find that I generate \$120 in value plus cash flow. So I have 20% return. Therefore, the asset return covers the liability return. Therefore, I should be funded. If I can do this for every scenario and every horizon, I come up with a matrix of return targets for the liabilities. These are scenario-horizon return targets. I have a measure on the assets for every scenario and horizon as well that tells me what is possible under my assumptions for the assets. If I have strict dominance, I know that under every scenario and horizon that I've considered, my assets fund my liabilities. The risk is, for those situations where I don't have dominance, by how much and in what circumstances do I underperform? My risk measure is that underperformance and a quantification of not meeting that target. It's a fairly trivial sort of setup. You can define a semivariance or downside deviation measure. It basically says that risk is the chance of not meeting the objectives of the required returns. Therefore, rank all the portfolios according to by how much they missed the target. I put some weight on each of these scenarios so that I come up with one number that I can use for the ranking process.

FROM THE FLOOR: And that return is?

MR. SHIMPI: The return is an objective that I have defined for optimization. It could be to maximize the expected return on the asset portfolio over the next horizon before I rebalance, for example. You could have an objective to maximize total return over the next horizon, subject to the constraint that I meet my required-return targets over all my scenarios and horizons, and I meet some other diversification constraints. On the other hand, if I wanted to do this realistically, I'd really minimize the downside deviation because I won't just maximize return. I will have some deviation. I will not be able to cover every scenario. Actually it's a quadratic program, where I minimize downside deviation, subject to the constraints. I give myself some slack in those constraints where I know I will face some problems. Then I can quantify how much slack I need. I develop, therefore, further information on scenarios that will cause problems, and I have some way of quantifying that problem by doing this specific analysis.

FROM THE FLOOR: Using one-year horizons?

MR. SHIMPI: For optimization, generally yes. Basically I've first defined the state space of all the scenarios and horizons that I'm interested in. Then I sort of slice and chop and find the feasible region, within acceptable risk limits. Then I'm trying to home in on the one portfolio within the feasible set. I have to pick a particular portfolio within the feasible set. I have to develop a selection criteria. If I use a one-year horizon, that's fine. There's no magic about using one year versus three years versus five years versus ten years. I'm just picking a portfolio within the feasible set of portfolios. The real work is done by setting the constraints across the multiple scenarios and the multiple horizons. But you can read about this. I wrote a paper several years ago and presented it at the second Actuarial Approach for Financial Risks International Colloquium (AFIR).

MR. TOWNSEND: Mortgage-backed securities have become increasingly popular. Can you distinguish between the different types of mortgage-backed securities? What are appropriate for insurance companies? What are not appropriate?

MR. SHIMPI: Well, let me give a generic sort of statement with respect to distinguishing between them. There are as many names as you want to create in these things. When the first collateralized mortgage obligations (CMOs) came out, there was basically the interest-only (IO) and the principal-only (PO) portion. If you get a security (it doesn't have to be a mortgage-backed only), any security, and get a series of principal payments, you get a series of interest payments. Well, instead of buying the whole bond, you buy just one type of cash flow and not the other. You buy just the principal or just the interest. That's the simplest example. But with CMOs that are pools of mortgage-backed securities, you do more interesting things. When they first came out, we were amazed that they had three or four classes. Now, as a matter of routine, they have 20-odd classes. So you've taken this pool of mortgages and sliced it so many different ways in 20 or 30 pieces. And the investor basically buys a piece of the action. And the various tranches, therefore, are characterized by how exposed or how insulated they are to interest rates, to prepayment behavior, and to the payment pattern of the other tranches that are in the pools that make up the CMO. That's about all without getting into a tremendous amount of detail. There are some very good papers out there that have definitions of these things. The generic definition doesn't mean that that's the definition that applies to that particular mortgage. Planned amortization classes (PACs) and targeted amortization classes (TACs) try to make

STUMP THE EXPERTS

sure that you are reasonably insulated from the prepayment activity as long as interest rates stay within a band. In a mortgage-backed security directly, whatever the prepayment experience is, you, as the investor, share in it fully. With the CMO, you may not share in all that in a uniform fashion.

MR. TOWNSEND: Many companies say there's absolutely no market value risk in CMOs as long as interest rates don't violate a 150-point movement.

MR. SHIMPI: That's right.

MR. TOWNSEND: *But interest rates move easily beyond that.*

MR. SHIMPI: Exactly, and that's why they come on the spread above the Treasury that they do. These are AAA securities. Here you have a AAA security and you're getting a spread above what another AAA without this feature has. You're obviously taking on some risks. The question is, what is that risk? And is the spread that you're getting adequate to cover that risk? Certainly, when you're sitting in an environment where the rates are stable and a 150-basis-point move either way is unlikely over your holding period and you're getting a 200-basis, 50-basis, or whatever the basis point spread is over the AAA, then it's riskless. I'm happy it's riskless, but within limits. Now, once rates really start moving on you, then all these option features that are built into this security start kicking in. If you're sitting on the wrong side of the fence, you're going to pay for it. But, remember, you got that extra yield early on for that risk, and that should have at least triggered something to tell you to do some analysis and figure out if that risk is an acceptable risk. If you determine it's an acceptable risk, and then events occur, okay. I think that's all right, because you've done the analysis. You determined that it's within your risk parameters, and you've taken on the security. The problem arises when you don't do the analysis, when you say, "It's a no-brainer, I'm protected. Rates will never move this way." You haven't done the homework. Then you get hurt; I'm sorry, you deserve it.

MR. TOWNSEND: More money is lost reaching for yields than at the point of a gun.

MR. HONG: I have some comments on this subject. I think CMOs are becoming an asset class the asset manager seems to have difficulty avoiding. It's a place where people are going to invest money. I agree, it's an unavoidable evil. It's very difficult, however, to model these assets to assess the risks. Also, there are limited studies and statistics, especially on commercial mortgage-backed securities. Four or five years ago, Resolution Trust sold commercial mortgage-backed deals, and they are different kind of animals. They might be interest sensitive but they also have a business cycle tied to them. You can look at your CMO holdings with your actual mortgage holdings, where your mortgage holdings' market values are going up. The CMO is probably prepaying because those people are actually getting better credit ratings.

MR. SHIMPI: There's always something broader to look at. It is the whole issue of the types of investments that insurance companies are undertaking. There was a time when really the only types of risks that insurance companies undertook were credit risk instruments. You'd know a company, you'd do a lot of fundamental research on the company. You'd read up about a company and you'd buy its bonds or stock because you knew the company. Now, you have the securities and there's no company to analyze really. It's

really a market that you're buying into. You've traded from a risk that you had a reasonable sense of, which is a credit risk business, and you've undertaken an interest rate risk business. I'd say many companies haven't really made that transition effectively. A considerable amount of work is being done and it's evolutionary. Let's think about going from an era where bonds were noncallable for the longest time, and that's what everybody dealt with. Now, of course, calls got embedded in bonds and it's tough to find bonds, at least corporate bonds, without call options, isn't it? So people figured out how to evaluate them and work with them.

When I started out in this industry, back in 1985–86, mortgage-backed securities, not even the CMO mortgage-backed securities, were coming to the fore. I remember my group generating a report called the mortgage arbitrage report. We looked at every mortgage that was available in the marketplace and we told people how much money there was to be made. We made a lot of money. The reason was that the market assumed that mortgages prepay in 12 years. This is the famous 12-year prepaid life assumption. If you had any mathematical sense, you knew that wasn't the case. Any elementary modeling that you did was far better than that 12-year prepaid life assumption, so we made money hand over fist. Then the market figured out that there was another way to do it. The market evolved and everybody was able to price mortgage-backed securities reasonably well.

So what do you have to do? You have to make it more mysterious. You pool the mortgages together and you slice them up, and you create CMOs. You can buy and sell mortgage-backed. They look fairly similar. There are pool-specific issues but often there is a general market or industry trend on those things and you can trade them in a relatively exchangeable fashion. But as soon as you move into the CMO realm, that particular CMO that you hold doesn't look like the CMO with the same name that is from another block of mortgage-backed. It's a completely different instrument that doesn't operate in isolation now. It doesn't operate by itself like a corporate bond does. Rather, it acts in concert with all the other tranches that are there in the pool out of which it's carved. You have this compounding of compounding of compounding of risks. It makes the analytical task very difficult.

The question therefore is, if you're not equipped to analyze CMOs, how much should you play in them? That's the real question. The gut opinion that I have is that, for those types of portfolios, you might actually want to make the asset allocation decision and then hire a professional portfolio manager who does nothing but manage that asset class. The manager will have the benefits of economies of scale and the analytical tools to run money for several companies for those types of portfolios. Then you evaluate that manager's performance against the performance of your other asset classes. But if you don't have the wherewithal to do that analysis yourself, you might want to think very seriously about whether you want to do it at all. But it's difficult to avoid the CMOs as an asset class.

FROM THE FLOOR: Are insurance companies' performances getting closer to each other? Are they able to differentiate themselves based on their investment performance more now because it takes more work, more analysis? Is everybody buying into these pools because they looking more like each other?

MR. HONG: I'd say no.

STUMP THE EXPERTS

MR. SHIMPI: On that basis, I'd say no.

MR. HONG: Different companies have different ways. Some companies will be more focused and cooperate. Others think they are specializing in private placement and they don't think they could do better in CMOs.

MR. SHIMPI: This whole aspect is a question of analytical risk. Some companies have made it their mission because they are good evaluators of analytical risk and interest rate risk. They would specifically go after interest rate lines of business so that they could basically make a spread. They believe they're good at it. Some of them have been successful and others have not, that's the story of business, anyway. For those that have been successful, they say, "Ah hah. See, it worked." For those that didn't, they say, "Yikes! Somebody buy us now."

FROM THE FLOOR: Can you give a brief description of what the current rules are for holding values for hedging against future uncertain cash flow?

MR. HONG: No, I'm not familiar.

MR. SHIMPI: I'm a little bit familiar with it. There is a session tomorrow on that. Joe Koltisko will be presenting as a panelist. They'll get into that in detail. But yes, there are specific rules about buying the hedge against an asset. Then you hold the two together and you actually account for them in a manner that's consistent. What you're really looking at is the performance of the combined pieces. The accounting implications will be of the two together.

MR. HONG: When talking about hedging, I'd like to make a quick comment in relation to CMO. Some people buy IO or PO as a hedging instrument. But with IO, for example, if you experience an interest rate drop, an increasing backup, your first reaction would be that the value would come down on IO and then it would go back up.

MR. SHIMPI: If it's there.

MR. HONG: If it's there. But the problem is, IO is not a good hedging instrument when interest rates drop or the principal has been paid, because when the interest rates go back up again, there is nothing really to collect interest from. So it's not a particularly good hedge at all.

MR. SHIMPI: Well, that's an interesting point. When you buy some of these instruments and hedges, then the reality plays out. You look at your portfolio of POs and the derivatives such as swaps, caps, or whatever. You say you've lost so much on these instruments. What sometimes fails to be asked is, how much did we make on the instrument that was being hedged? You have to look at it together. It's reinsurance. Therefore, it should go through at minimum the same type of analysis that you do for reinsurance. What is my retention for risk and how much do I want to cede? That's the analysis that you have to do for the hedging. At some of the derivative seminars that are put on, we say that if you've hedged away your mortality risk, or at least elements of mortality risk that you don't want, and you've hedged away, in a sense, your expense risks, because you can outsource it, then why are you hanging on to that interest rate risk? Maybe there are elements of it that you don't want.

