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Risk-Based Capital

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Summary: This panel discussion provides an overview of the current risk-based capital (RBC) requirements for life insurers, as well as insight into topical issues and potential changes in RBC.

MR. CRAIG F. LIKKEL: We all know what risk-based capital (RBC) is. Obviously, it's been around for more than 10 years. It started back in the early 1990s, when the regulators and some industry leaders felt that they needed a better system, an early warning system. Year-end 1993 was the first official filing. It's basically a dynamic tool for measuring solvency, relative to the scale of companies' risks. If that solvency measurement gets below the designated levels—you're all probably familiar with the company action level, regulatory action level and authorized control level—that triggers regulatory intervention. Perhaps more important, the discipline involved in the RBC process makes companies more aware and more watchful of their own levels of capital and surplus.

As I looked at the history and recent history, there's been a continuous process of refinement and update of RBC since its implementation. A lot of theory and effort went into the initial version, but we're continuously trying to refine it and make it more robust and more reflective of the changes in the market, the products and the risks.

In terms of an overview, a link to a Web site gives you a nice four-page summary. If you want a short and concise overview, I recommend this document, which is available at the NAIC Web site at *www.naic.org/frs/rbc/docs/RBCoverview.pdf*.

I won't go into the details of the enumerated risks. Lloyd will spend a little more

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

time on the risks and the formula for RBC, but you're all aware that there is a significant covariance element in these various categories of risks.

Before I cover the changes in 2004, I want to point out the references where I found some of this information. In three days, I was able to come up with what I think is a concise and fairly complete picture, an update of the understanding that for me was about six or eight years outdated. The first reference is the NAIC Web site. Within the financial regulatory services division, there's something of an RBC subsection. You go to that site and see the title "Capital Adequacy Task Force." That is the relatively new name. The group consolidated, I think, the Life Risk-Based Capital Working Group and the Health and the Property & Casualty Working Groups. It consolidated responsibility of the three working groups into a single Capital Adequacy Task Force.

You can see on the sublinks, there are general information and exposure drafts. There's some good information there and a link to the site with the Academy's information on RBC C3 Phase 2. There's specific information. The top line says "Life Risk-Based Capital." If you go to that link, you'll see some highlights. At the bottom, you'll see specific information, and you can drill down into recent implementation of changes. We'll talk about a few of those.

Also at the bottom of this page was something that I was surprised to find and found useful. That was a life RBC newsletter. It looks like about once a year, the NAIC puts together—in this case, just a two-page—newsletter that gives you the gist of the changes that have been adopted for the current year-end. I cut off the page, but it has an entry for C3 Phase 2. The gist of that entry is that instruction to ignore line 35 because we're not implementing Phase 2 until 2005.

The Academy is very involved in RBC issues. The Life Capital Adequacy Subcommittee (LCAS) is basically the cadre of people who are the architects of what we've seen in recent times with C3 Phase 1 and C3 Phase 2 proposals. The Academy Web site is rich and deep with information. As of four days ago, it posted the updated September version of the C3 Phase 2 report of the LCAS, so that's now available on the Academy Web site.

If you want to drill into this topic, you can get into the meeting materials, the minutes and all of the attachments and all the discussion of the NAIC Capital Adequacy Task Force and the Life and Health Actuarial Task Force. If you want to drill into the technical aspects of the formulas themselves, you can, I think, review those in great detail in the Accounting Practices and Procedures Manual and the annual statement instructions. There are additional sources.

What are the changes in 2004? I'll try to give you a brief perspective. The changes in 2004 are like an away preseason football game, compared to the Super Bowl, when you think about what's coming in 2005, which is the target for C3 Phase 2. Some of these items in 2004 are housekeeping issues. There's a new preferred

stock treatment for asset risk, whereby the factors are identical to bonds. The rationale is that the classification of preferred stock now takes into account the structure of those instruments. If you have preferred stock that's NAIC Class 2, it's basically the same risk as a bond, so now they'll get the same factors. There's a small reduction there. Normalized loss ratio is for mortgages. It's updated every year. The newsletter says it's likely to be reduced from two basis points to 1.7. It's publishing factors for a new kind of investment. New investments come along once in a while. Apparently there's a new type of low-income housing tax credit investment that some companies probably have acquired.

There are a couple of more significant items. There are two clarifications for C3 Phase 1. Those involve, first, equity index annuities, based again on a recommendation from the Academy subcommittee. The equity index annuity reserves will be excluded from exposure in the definition of the exemption test for the Phase 1 interest rate risk scenario testing. That's just a cleanup item because the equity index annuities were excluded from the actual scenario testing itself, so it's consistent to exclude them from the ratios definition in the exemption test.

A second thing is maybe a little more significant. Based on the Academy's recommendation, as I understand it, the decision has been made to allow companies to elect the C3 Phase 1 scenario testing, the more robust testing. Previously it was based on this ratio of exemption test, and if you didn't fail the exemption test, you couldn't do the more robust testing. Now you can, in fact, elect to do that testing, which may be beneficial if you have a well-matched, well-managed company. But once you elect that testing, you're not allowed to go back without regulatory approval, so it's a one-way election.

There was an item mentioned in fact on the program for this session, which I'll cover with this slide. It's a fairly technical topic that I don't have personal experience with. There are significant changes to a specialty product line, which contains separate account products that guarantee an index. You might have an annuity or product that basically guarantees a return of the Standard & Poor's (S&P) index or some index referenced to the London Interbank Offered Rate (LIBOR) and a fixed-rate guarantee. There are some changes for those types of products that were recommended and adopted last year but made effective for year-end 2004.

In a nutshell, the changes distinguished between two categories of investment strategies on these types of products. They describe one as Class 1. A company invests in the separate account, but it invests in a general account type of assets with a swap overlay to specifically match the index guarantee. The treatment for C1 risk purposes is called the look-through method. You look at that separate account and treat the assets in that account like the general account. This is instead of, by the way, formally a general classification of these products as a low-risk type of asset category.

The second classification is when companies try, in effect, to replicate an index return, but it's not perfect. It's not an exact thing. They're trying to invest in assets that duplicate the index return over the long term. This one is more complicated. It uses something called a tracking error method. The bottom line is, I think, that the RBC requirements on these types of products will go up some. I can't quantify it for you, but you can read more about it at the NAIC Web site, which provides links to documents on this particular topic.

At this point, I will turn it over to Lloyd, and he'll talk to you about reinsurance.

MR. LLOYD M. SPENCER JR.: I'd like to cover a few quick topics related to reinsurance and RBC, looking at three particular areas. As Craig had mentioned, I'll give you a quick refresher course on the life RBC formula, cover particular reinsurance aspects of the formula and then optimization strategies that some clients have pursued, related to life RBCs.

The traditional life RBC formula has remained relatively unchanged. It's been around for a number of years. As for the particular components, subcomponents, C1 has been split between unaffiliated common stock and all other C1 risks, C3 is split as well between the interest rate and health risk and C4 risk is split between premium and liability-based risks and health administrative expense components.

In terms of the application of the formula itself, as Craig mentioned, there is a covariance element to the formula that looks not only at a correlation adjustment for a C1/C3 risk that may be correlated, but also differentiates between traditional asset default and interest rate risk versus general pricing risk and recognizes the diversification effect, that the likelihood of all of these bad things happening at one time is remote.

With that said, I'd like to transition into particular components of the formula that are driven by reinsurance or have certain reinsurance aspects to them. As you may be aware, there is a separate reinsurance page within the software and within the formula itself that primarily is addressed at the risk that the ceding company would take introducing the reinsurance recoverables on its balance sheet. It's nothing driven by the credit quality with a particular reinsurer that you're dealing with. It's more of a "one size fits all" approach, with generally a Class 1 or Class 2 bond factor applied to the amount of the recoverables with some offsets for some items that would be double-counted if they were not otherwise offset. That's the beauty of pulling numbers from the annual statement.

In addition, there are pages that were added for the 2003 formula that explicitly relate to modified coinsurance and funds withheld, pages 38 through 41. As has been the case for a number of years, asset default risk is now viewed as being ceded through to the reinsurer as part of a typical modified coinsurance of funds withheld transaction. That has not always been the case. In prior years, we would have viewed the risk as staying with the ceding company because the assets stay

there, but that is no longer the case.

The concept in principle—they may be dirty words here, but it's certainly an admirable concept from the NAIC—is the mirror imaging of RBC. The intent is that ceding companies and reinsurers would communicate. The reinsurer generally lacks the information necessary to calculate the formal C1 other charge for the basket of assets that are sitting on the ceding company's books. It requires a degree of communication between the ceding company and reinsurer. No doubt, you've been party to that in the past year-ends, the requirement being as close to December 31 as you can get it. There's the admonition from the NAIC, as well, indicated in the formula. While there's no requirement for a particular detailed calculation to be filed, one must always be prepared to demonstrate how the number was arrived at.

As you might normally think, C2 is impacted by reinsurance, as well, as it is a function of the net amount of risk. The face amount, less reserves on both the assumed and ceded side, are netted. As you're no doubt aware, the net amount at risk (NAR) component decreases based on the size of the company. The larger the company is, the lower the relative risk is. C2 is intended to cover both the risk of fluctuation and simply misestimating the pricing parameters.

In C3a, interest rate risk, page 23, reserves are represented as net of reinsurance, and to the extent that cash-flow testing is incorporated in the process of determining one's C3 component, those flows are viewed as net of reinsurance.

I've subdivided optimization into asset-related strategies and liability-related strategies. Ceding companies—and depending on size of companies, certainly some of these factors will vary—may be able to recharacterize their asset concentration in single exposures. There's an adjustment, a loading in the formula and the C1 component, that recognizes a particular concentration in the company's asset issues that are on your books. Companies may be able to include assets from issuers where they're overexposed in the basket of assets that are backing the funds withheld or modified coinsurance (modco) arrangement, thereby to some extent reducing the adjustment that otherwise would result from the formula calculation.

I would also observe that non-U.S.-domiciled reinsurers potentially have more flexibility in determining their investment options for the assets that back ceded RBCs and would include business that was potentially ceded to a U.S. company and then, in turn, retroceded to an offshore company. In that sense, the general asset investment restrictions that apply to U.S. companies would not be in force, and reinsurers would potentially have an opportunity to leverage their investment options. I would remind you that modco or funds withheld allow ceding companies to retain investment control over their assets that are backing liabilities, which eliminates the need for any kind of extended coordination of crediting the rates or anything along those lines.

I view liability-related strategies as both an assumed and a ceded issue. Typically you think of reinsurance as a ceded process, but reinsurance can be used in both directions. We worked with a number of clients who've changed their RBC profiles not only by ceding business, but also by assuming business. Back to the notion that the C2 NAR-based factors decrease as the amount of in force on a company's books increases, to the extent that smaller companies are not extensively writing life insurance business, there may be an opportunity to add life business at marginal cost. Companies in general that may have significant asset accumulation business on their books may benefit from one of two courses. You could retrocede part of the asset accumulation business, as we've described previously, or simply the assumption of individual life reinsurance or group life reinsurance business could be used as a diversification effect. It is recognized in the NAIC formula, and the addition of that business on your books could come at pennies on the dollar in terms of RBC costs.

There are certainly other motivations along the way that constrain where one wants to go. Obviously, we're talking about statutory-driven issues. There may be tax-related issues that would lead a company not only to harvest life RBC benefits, but also tax benefits from assuming business to either a U.S. or non-U.S.-domiciled company. I'd also say that a number of companies may be using life RBC as their capital allocation model within their company. To the extent that the companies may be trying to hit a benchmark RBC level—matching the S&P formula, the Moody's formula or the Best formula—each one of those rating agencies' formulas has some similarities and often many differences with the NAIC formula. An opportunity to optimize on the life RBC basis may not be there on an S&P basis, for example.

Working closely with your corporate actuarial staff in the optimization of not only the life RBC formula, but also the allocation process itself is one method that can pay huge dividends, allowing you to write additional business and see additional premium and profit flow through your business with relatively little impact on the RBC amount itself.

With that, I'll turn things back over to Craig, who will take this the rest of the way on C3 Phase 2.

MR. LIKKEL: For C3 Phase 2, I'd like to give you an outline of what I'll try to cover. This has been in the works for more than five years. It's still a work in progress. We'll try to give you a little flavor of the background and the scope. It primarily involves variable annuities. There's a lot of that business being done today and over the past 10 years. If you happen to be in a company with no variable annuities and nothing covered by the scope here, this may be only of academic interest. I assume most of you have some greater level of interest than that. We'll talk about the background and the current status and give you an overall framework of the methods that are being proposed, some specifics about the relationship between the RBC calculation and the proposed reserve calculations using the same methods.

Then, I'll try to highlight some of the outstanding issues and some of the implementation challenges, as well.

First, let's look at the background. As I mentioned, it's been going for more than five years. I'm sure some talented people have put in volunteer hours that number in the thousands on this. There's a lot at stake. There's a lot of business being written. There's a lot of risk that's been assumed by companies of this nature. It ties back to the C3 Phase 1 implementation that came about in 2001. At that time, it was discussed and agreed to extend that to Phase 2 for a more robust methodology for variable annuities with these types of guarantees. The initial report was in December of 2002. There have been a couple of versions updated since then. The latest was just published for the September NAIC meeting.

The partner, if you will, of this initiative, coming in on the back end, is potential significant change in the definition of required statutory reserves for variable annuities. The Academy formed a variable annuity reserve working group in early 2003 to build upon the stochastic methodology proposed for RBC to develop reserve methods that were basically in sync and consistent.

In June of this year, it published for comment a draft actuarial guideline that would basically redefine the Commissioner's Annuity Reserve Valuation Method (CARVM) for variable annuities. The scope, meaning what kinds of business are covered here, has evolved over time but basically includes all variable annuities, whether they have guaranteed living benefits (GLBs) or guaranteed minimum death benefits (GMDBs) or not; group annuities with these types of guaranteed benefits; and in a catch-all category, all other contracts having similar guaranteed benefits. It specifically excludes some special categories of products that sometimes appear in a separate account. Those would be modified guaranteed annuities, equity index annuities and, as we talked about earlier, separate account products with index guarantees.

The status, which is probably the most important takeaway from our session, is that this has a lot of momentum. It's coming, but it will not happen at year-end 2004. Both of these sets of recommendations and papers and proposed methodology, as well as documents, were presented and discussed at the recent NAIC meeting, and all indicators are that it's targeted to be adopted in 2005. The adoption date has, as most of you know, slipped a lot. Back in '02, it thought it might happen in '03. Early this year, it thought it would be effective for year-end '04. But now, with a lot of comments, a lot of issues and a lot of concern about the complexity and the intricacies of this methodology, it looks like it will be in '05. The consequences are that we'll continue one more year with the current approach to C3 risk from Phase 1, which I believe covers fixed account on variable products, and we'll have one more year of relatively low variable annuity C1 and C3 risk amounts.

Reserves may be a little more controversial at this point. As I said, there's a new

actuarial guideline, and the game plan, as I understand it, is to effect a change in statutory reserve requirements via an actuarial guideline, which—again, as I understand it—will be retroactive for virtually all business on the books. By the way, when I say, "I believe," or "This is my understanding," I didn't get a chance to do a thorough peer review on this presentation, so you all are my peer reviewers. After we're done, if I misstate anything or if you have a thought to expand on a point, feel free to come to the microphone.

The overall framework is moving away from formula assessment of risk on the liability side and completely separate formula assessment of risk on the asset side to more of a holistic total balance sheet approach. It's based on principles and on a detailed description of methodology and requirements and professional responsibility of the actuaries involved to comply with those principles. It's not based on simple rules or static factors. Development of the framework is a consequence of the priority of the goals, the methods and the assumptions that people developed in this research. An important aspect of the framework is the certification that will be required. I'll add a little more on some of these points.

The goals, I think, are summarized here in that the regulators, the profession and industry leaders seriously want to improve the ability of companies to meet their contractual obligations. That's the real bottom line. Some sophisticated, some generous guarantees have been written into these contracts. There's a lot of variety, and there's a lot of exposure to long-term risk. This whole initiative is in response to those product issues.

The goal here is also to reflect the actual risk profile for a company—an individualized risk profile—to recognize your actual experience, apply the conditional tail expectation (CTE) method to reflect a robust calculation of the individual company's risks and to allow aggregation for a company, to allow some natural offsets within a portfolio of these types of annuity products. I mentioned that a tag-along is the reserve initiative, and an important goal there is a coordinated and consistent approach for both minimum reserves and RBC.

What about some of these methods? You've probably heard of the CTE method. I'll describe that a little more in detail. The big picture is that there are three methods to be concerned about at the moment. One is the expanded scenario, the full stochastic approach of literally 1,000 or more scenarios to apply the CTE method. Then there is kind of a control single-standard scenario that's being specified, again, in the drafts. None of this has been adopted yet, but in the drafting and the working groups, there is an initiative for a standard scenario as part of the reserve calculations. It's not yet part of the RBC calculation. I'll add more on that in a minute. The third is the alternative method. I would characterize the alternative method as the shortcut, a more deterministic approach, which has limited availability, depending on the guarantees in the contract.

The basic equation is that the reserve or the RBC, depending on which one you're

calculating, is the greater of the CTE method result or the standard scenario method. But note the asterisks. It's very important. The standard scenario method has been included in the proposal for reserves, but it's not included for RBC. The other footnote is that the CTE method can be replaced by the alternative method—again, more of a factor-driven approach, but much more robust than the current factors in place. But that replacement or that substitution, that option, can be elected only if your product has GMDBs and does not have GLBs. The GLBs make the alternative method unavailable.

I'd like to talk a little more about CTE. It is a statistical risk measure that provides an enhanced, much more robust statistic for low-probability, high-impact or high-consequence events. Basically when we say that we're setting RBC at a 90 percent CTE, it means that we're taking the 10 percent of the worst results and calculating our standard based on the average of those worst 10 percent. It differs from, I think, the historic principle or practice in setting RBC amounts. Historically, my understanding is that it's been more often a target of 95 percent confidence, but here we're saying it's the average of the worst 10 percent. if the worst 10 percent is kind of a uniform distribution, you'll get pretty close to a 95 percentile probability. But the CTE has the advantage that if the worst results are—if the worst 1 percent in the tail is—a much, much larger or disproportionate adverse result, the CTE will come out more like a 96 or 98 percentile when you do that averaging.

Values are generated from a stochastic scenario with what needs to be a robust projection system and approach using prudent best-estimate assumptions, which I'll define in a minute, and calibrated fund performance distribution functions. There's a lot of new terminology. It takes awhile to get comfortable working with this. For RBC, application of the CTE method, again, involves calculating the present value of the accumulated deficiency amounts for each scenario, sorting those from worst to best, ranking them, collecting the worst 10 percent and determining what's defined as the total asset requirement. That is, what are the total assets you have to have now to enable and fund all of your obligations over your entire projection horizon for all of the 90 percent of the good guys, of the good scenarios, and to fully fund the average of the 10 percent of the worst scenarios? That's the total asset requirements. The actual RBC amount ends up being the excess of the total asset requirement over statutory reserves. The values are calculated on an after-tax basis and aggregated with any scenario.

The methodology for reserves is similar, but with a couple of key differences. Reserve, again, present value amounts for each scenario and sort them worst to best. The proposal for reserves is a CTE at the 65 percent level, so you'll take the average of the 35 percent of your worst case results and determine that amount, subject to a cash surrender value floor, and define that as your reserve. Values on reserves, however, are calculated on pretax basis. Again, aggregate with any scenario. As in virtually all of our work, assumptions drive the results. Prudent best estimate is a defined term in the Academy report. I don't have the precise definition

here, but it requires that you set your assumptions based on actual experience, but add a margin when you have less experience to look at and thus, less confidence. It includes lapse rates, partial withdrawals, benefit utilization, various forms of policyholder behavior assumptions, as well as the simple things, such as mortality and expenses.

The customer behavior should reflect some degree of market sensitivity. How you develop that and how you make those exact decisions will be key to some of the implementation challenges. Sensitivity testing is recommended. When you're setting assumptions that have a lot of uncertainty, sensitivity testing is highly recommended.

I'd like to offer a few words about the investment scenarios. You need to use a sufficient number, typically a large number, of equity scenarios. Again, in the Academy report, in the basic documentation that describes this new methodology, there's no mandated statistical method or distribution. There are some general principles, some general rules, one of which is that higher expected returns should have higher expected volatility. They should be based on real-world models and typically will be more than a 1,000 scenarios. An important constraint must be met. The model, the scenario generator, must meet the calibration requirements for equity returns. There is in the reports a set of standards, a set of, I believe, total return for S&P 500 distribution, so you must calibrate to that type of distribution of returns on a typical, or vanilla, equity index.

I would guess that's a dynamic thing, but I'm not sure. We know from our equity index work that volatility ebbs and flows, goes up and down, so I assume that this calibration is a dynamic thing, but I don't know exactly how that is handled. I'd be interested if anybody out there does.

I mentioned earlier the standard scenario concept, which is even more a work in progress than the entire scope of the C3 Phase 2. The outstanding question that I simply don't know is, will it apply to RBC testing as well as the reserve testing? I'm not sure. There's more work going on. There have been several drafts of proposed "standard scenarios." There are some companies that are opposed to this or various aspects of it, as minimum requirements used to set floors, so there's some controversy around this concept.

The alternative method—again, the shortcut, the more deterministic, optional, direct calculation method—is available in both the proposed RBC and reserve initiatives. But again, as I mentioned earlier, it can be used only for variable annuities with GMDBs. It's not an option if you have GLBs. This type of calculation is done on a seriatim basis. It's not as simple as multiplying times a set of factors, but it is a lot more direct and has less complexity from a modeling standpoint than the scenario testing approach. However, as with most shortcuts, it will likely produce somewhat higher RBC and reserve results, as the expectation.

Let's turn to reinsurance and hedging. You've heard about reinsurance, obviously an important element of an RBC and hedging, which has become an active topic for companies in this line of business to control and minimize their risk. The proposal basically says the calculations are done net of reinsurance. The current hedge holdings are the assets that represent what you've acquired to execute a hedge strategy of one sort or another. Those holdings are reflected in the initial assets being modeled. But then the real key term is, what constitutes a clearly defined hedging strategy? If you can meet the definition of a clearly defined hedging strategy, you can, in fact, implement pretty much the full effect of your hedging strategy and its efficiency and its risk avoidance result. If it's a well-done hedging strategy, you can implement that in your model and in your testing. Some adjustment, some recognition, needs to be made for hedging risks, since there's no such thing as a perfect hedge.
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The new Appendix 10 to the most recent Academy subcommittee RBC report—again, the one published just last week on the Web site—goes into some detail as to what constitutes a clearly defined hedging strategy. Among other things, it requires a written document developed by management—sort of signed off on by management—in accordance with an investment policy that's adopted by the board of directors or a board committee with that authority. Such a document and description must address at least 10 items, and it also must be effectively implemented for three months and closely monitored going forward.

The key requirements for a clearly defined hedging strategy are that it describes specifically the risks being hedged, that it clearly states the hedge objectives and that it discloses the risks that are not being hedged. Typically in mortality risk, you probably wouldn't hedge that with an asset strategy. It would need to describe the financial instruments that would be used in the hedge and provide some detail about the hedge trading rules, including kind of the tolerances, some of the practical aspects. You can't hedge every day or every minute, so you must have some strategy for tolerances and execution. It must describe the metrics for measuring the hedge effectiveness. That implies that you will measure that effectiveness on an ongoing basis. It must describe and state the criteria that will be used to measure that effectiveness and the frequency of measuring that effectiveness and the conditions under which hedging will not take place. Finally, it must name the person or persons responsible for implementing the hedging strategy. We'll name names.

Appendix 11 to the same new RBC report goes into some detail about the actuarial certification requirement. Most of you are probably familiar with the appointed actuary responsibilities, the appointed actuary's opinion, the standard requirement at year-end. The documentation that goes with that is substantial. It involves the actuarial memorandum, regulatory issues, summary or executive summary and various extensions of that. It's not a small effort, but most companies probably have gotten used to it by now. I guess I'm here to tell you that this requirement will be equal or greater in scale. If you take a look at the requirements to which the

designated professional actuary must certify, it's a long list. Of course, it's an annual certification, and it requires a detailed actuarial memorandum, which again, would typically be kept confidential but would be available to regulators upon request.

Let's look at some of the outstanding issues. The effective date, which we've already mentioned, is now targeted to year-end '05. The standard scenario is kind of squishy and blurry. I don't have a real clear picture of where that's headed. The allocation methodology is mentioned, and I think it has to do with allocation between C1 and C3 risk buckets. Hedging practices are also outstanding—what's allowable and what meets the definition of a clearly defined hedging strategy.

These documents have been in an iterative process, so there have been exposure drafts. They've been revised, and along the way, companies have had a chance to comment. A number of them have, as have the American Council of Life Insurers (ACLI) and the Academy on occasion. In particular, some of the comments from the industry that I understand have been submitted are that they don't quite see the need for the standard scenario, so there's some mixed support for that. Companies are questioning some of the specifics in the draft standard scenario. Specifically, the mortality assumption, I think, originally proposed to use 100 percent of the standard variable annuity mortality table. I'm not positive of the name, but some companies believe it should be something on the order of 65 percent of that table.

There is a general question of floors. Again, that relates to the standard scenario. Are they really necessary? There's also an opinion, I guess, that the scope should not include variable annuities without any guarantees. Right now it does, and I think there is an expression in the working documents that these types of contracts are included to measure the expense recovery risk. If you have a variable annuity, you pay commissions and acquisition expenses. You don't project the results and measure, "Are we adequate to 90 percent CTE on just recovery of acquisition expenses? Are we underpriced or not?" I guess is the sentiment there.

There were some other industry comments regarding reserves. Changes in reserves should be made via regulation or statute, not by actuarial guidelines. I don't have a strong personal opinion about the use of actuarial guidelines. I'd be interested if someone in the audience does, one way or the other. Some comments regarding the alternative method were that while it may be needed or appropriate, it produces results that are too high. That's a criticism that's come through. There were comments about volatility. The thought was that we need an effective smoothing mechanism to dampen the volatility as we transition to this new approach.

Some implementation issues have been mentioned. We get down to what some of us have to do in our companies and some choices we have to make. Do we use standard or the alternative method? If we do a third-quarter analysis to give ourselves some time to do the models and to check and recheck and run sensitivity

testing, how do we adjust and get comfortable with the results as of year-end?

There are issues around the scenarios of volatility and validation. I'll talk about each one of those briefly. The Academy has described the overall characteristics and the theoretical approach for the scenarios, but it has also given you a set of examples. The Academy has provided a prepackaged set of scenarios for various types of funds—I think around 10,000 scenarios for each type of index. They've also provided some tools for techniques to select subsets of scenarios. You don't want to run 10,000 scenarios. You can use some of these tools to optimize and reduce the number of scenarios. In spite of all that, companies can use their own scenario generator if they can demonstrate it meets the calibration requirements and other requirements that are described.

Let's turn to volatility. The problem of results changing significantly from period to period could potentially have a visible and material impact on the company's year-end results in terms of RBC ratio and/or reserves and bottom line, gain from operations, if this goes all the way through reserves and flows through the income statement. Obviously, it's a big concern. ACLI and company management generally do not want a structure that will provide unacceptable volatility. There is a smoothing and transition proposal. I'm unable to articulate it to you at this time, but again, it's available in the documents.

Validation is always a concern with the appointed actuary, the designated responsible actuary. Is the model a good model? Is it appropriate? Do all assumptions fit the profile of prudent best estimate? Are the results correct? Will the totality of the work involved be acceptable to the regulators? Obviously, these are some key issues.

My conclusions are not sophisticated, but there are some obvious ones. There's been a lot of work invested in this initiative. There's still a lot of work to be done and a lot of education and training to make it happen in the companies and in the departments responsible. There are still some key issues to resolve, and there's no question that it will require some significant resources and talent. I think the overall objective is worthwhile. The end result, hopefully, is a much more effective RBC and a more effective provision on the part of companies to meet their future obligations.

That concludes our presentations. I'd like to open it up to you for any comments, questions or observations.

MR. CLARK A. RAMSEY: Craig, the potential for applying these stochastic tests to variable annuities that do not offer any guarantees seems to raise the question of how would expected additional premiums on a flexible premium product be handled or considered, if at all? Are you aware of that issue coming up?

MR. LIKKEL: I'm not aware of a specific position or rule on that. My expectation is

that would be part of your prudent best estimate assumptions, in terms of what level of subsequent premiums to expect on existing policies and what might be policyholder sensitivity to different scenarios in that respect.

MR. RAMSEY: A second question would be on the calibration of the scenarios. I don't know whether you're familiar with the details or not, but I'm wondering whether they're as flawed as most analysis of past returns is. In general, the return you get depends to a great extent on what you pay for something. The stock market, which probably drives the bulk of this, obviously offers different values at different points in time. Historical analysis of returns typically seems to have the flaw that it ignores starting points. Are you familiar enough with the calibration requirements to say whether they're more along the lines of a typical average of past returns and volatility of past returns or whether they are, in any way, starting point-dependent?

MR. LIKKEL: No, I'm not. I think I mentioned in my talk that I'm not sure about how dynamic that calibration requirement might be. I'd welcome anybody in the audience to comment if they have more specific information on that question.

FROM THE AUDIENCE: When the RBC was first changed—I think it was in 2001—Moody's had written a paper titled "Five Steps Forward, Five Steps to Go." One of the things that it pointed out was this variable annuity, which has been changed now with the Phase 2. It addressed the concerns of the RBC. Let's say you chose to strengthen your reserves. RBC penalizes you for that because there's a charge for the reserves. Do you know of anything that will address this issue going forward or that will attempt to correct this setback in RBC?

MR. LIKKEL: I think it addresses that issue because RBC will be based on a difference. It will be based on the excess of total asset requirement over statutory reserve. As I understand it, if you increase your reserves by $100 million, your RBC will reduce by $100 million. I take that back. It has to flow through the covariance formula and calculation, but it's a pretty direct offset. If anybody disagrees, let me know.

FROM THE AUDIENCE: To answer Clark's question in terms of the calibration technique that was used, it was based off of Mary Hardy's paper on regime switching. The calibration points are one year, five years and 10 years, but it is a regime-switching model. Other models can be used in your actual testing. Some people who have experimented with this said basically that if you use, for example, a lognormal model instead of a regime switching, it's probably equivalent. It's not exactly equivalent, but a mean down about 3 percent and volatility higher than current volatility.

MR. LIKKEL: So there's not really an annual true up to some current market volatility?

FROM THE AUDIENCE: It's more, as I said, a true regime-switching model. Also, I have a comment on those standard scenarios. As Craig mentioned, it is a moving target, but there is an expectation that both the reserves and the RBC will have a standard scenario—reserve being a seriatim basis because that's how you do reserves, and the RBC being an aggregate test because that's how you do RBC.

MR. LIKKEL: Donna, why wasn't that in the September draft then?

FROM THE AUDIENCE: I hate to say it, but it was basically the timing of the report. It's not an Academy recommendation. It is a regulatory recommendation specifically written by New York. One of the reports, I think, says that it's not an Academy recommendation, but it wanted to let people know. The other one is that the report was done slightly earlier, so it didn't include the regulatory recommendation.

MR. LIKKEL: I think the latest one is the August letter. Does that letter describe effectively both the standard scenario for reserves and for RBC?

FROM THE AUDIENCE: Yes.