

# 2004 Valuation Actuary Symposium \*

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## Session 41OF

### Valuation Issues Arising from the Current Economic Environment

**Panelists:** David Ricci  
Francis P. Sabatini

*Summary: Attendees are encouraged to send in their "hot button" issues, as panelists will offer their perspective and encourage participation.*

**MR. DAVID RICCI:** This is an open forum, and as such I do not feel obligated to be an expert on anything, but instead to elicit comments from you, the participants, as to the various issues I discuss. I have with me venerable Frank Sabatini of Ernst & Young, who will speak following my presentation. We'll hopefully have a lively session after that on the issues that have been raised.

I'm going to go very quickly through the following issues: regulatory trends, corporate governance, dealing with risk and asset-adequacy analysis. I'll touch briefly on globalization, performance measurement and the standard of SOP 03-01. I've expanded the topic of valuation issues. I'm really discussing issues relevant to the appointed actuary or corporate actuary. A lot of them will be valuation-related, but some of them will relate more appropriately to issues of risk assessment and performance measurement that are not traditional valuation issues.

In June, the NAIC Life and Health Actuarial Task Force (LHATF) met in San Francisco. One of the discussion items was the C3 Phase II Risk-Based Capital (RBC) Working Group. They voted to expose the draft for the fall, but it was likely at that point in time that it would not be operative until 2005. The RBC proposal represents a fairly radical departure from previous measurements for variable annuities (VAs) using stochastic measurements with equity generators, most notably the Society equity generator using the regime-switching model. The approach is stochastic and eventually comes up with an amount equivalent to

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conditional tail expectation (CTE) 90 of the average of the highest 10 percentiles or the lowest 10 percentiles depending on your perspective. The most difficult part of this new measurement is that it is a significantly different application, and it is obviously necessary considering the kinds of risk that it's measuring. For variable annuities, the commissioner's annuity reserve method (CARVM) annuity reserve underlines that RBC is also going to be measured in a similar way using a CTE 65 and the difference being put up as RBC.

In addition, in that meeting and in subsequent meetings, discussion was made concerning Actuarial Guideline (AG) 38 or AXXX. There's a concern among a number of companies and regulators that new product designs in universal life (UL) were being used to subvert the intention of AXXX. Many people felt there had to be some kind of remedy to that process, while others felt it was a matter for states to regulate on the matter of discipline. It was a fairly cut-and-dried regulation, and anybody that chose to use certain measurements to get around it was in essence in violation of that regulation.

Since then, there's been quite a bit of activity in that area. At the Anchorage meeting, three proposals were presented. One was in a paradigmatic attained-age level reserve method that was similar to what's currently being used for variable life insurance. There was a proposal on a draft by New York with the tightening up of the current AXXX or AG 38, and then there was a recommendation by 10 companies to maintain the current AG 38 requirements and slowly develop an ultimate solution based upon general equity concerns. If necessary, they wanted to add an asset-adequacy provision to AG 38 to put more teeth into it so that appropriate level reserves would need to be established based on actuarial judgment.

FAS 133 had them interested in any kind of practical application issues in coming up with value derivatives. In all of these cases, there's a general tendency (and you'll find an increasing tendency as we go forward in the process) to rely more on the judgment of the actuary in measuring the risk and developing the reserve than was contemplated in some of the more formulaic procedures. I think this is just a fact of life considering the way in which the products are currently being constructed, and it's not going to go away.

Under corporate governance, Sarbanes-Oxley is probably something that's near and dear to most of you. I'd be interested in your perspectives concerning how you're coping with it. In my company, there is a tremendous amount of activity occurring, particularly in the auditing and accounting areas, but also in our area in developing the controls, procedures and necessary checks and balances required to ensure that there is a relevant amount of independence and reliance on the way these things are calculated. In a way it reminds me a little of Y2K in the sense of urgency that's been presented before the shareholders. Hopefully, it will have a little more significance as time goes by. I think we have reaped some benefits from going to a Sarbanes-Oxley approach. The unfortunate thing is demands for resource haven't kept up with the requirements, and so staff is being stretched to fulfill whatever we

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need to in order to satisfy this.

We found that we're making more and more presentations to rating agencies that are involved in a number of new initiatives. We feel that it's important to bring them into the loop as to our intentions concerning those. Our most recent one developed with a capital market scenario for term business, and we found that getting the rating agencies on board with a reasonable presentation is essential for getting a decent review. In most of these categories (particularly in Sarbanes-Oxley, but also in the review of pricing memoranda), we have instituted a reasonably aggressive peer review procedure, which has helped to make sure people have identified the risk appropriately.

The role of the valuation actuary in all this corporate governance is pretty essential. I don't know whether most of you as actuaries feel that it's a good thing to be happening, but it's a fact of life with those of us that are in that role.

In dealing with risk, basically there are three major categories: risk measurement (most notably with reserves, but also with capital required), management of the risk (which is probably a shared responsibility with both the pricing areas and the other managerial areas) and the governance.

Asset-adequacy analysis is playing a bigger and bigger role in valuation these days. In AG 39, it's explicitly mentioned. The types of scenarios you choose—deterministic or stochastic—and the types of assumptions that are employed should be extensively reviewed by other people in the organization.

Gross premium valuation can also be an essential tool in coming up with conclusions concerning recoverability and general adequacy of reserves. Secondary guarantees are a particularly challenging part of the development of asset adequacy. The kinds of risks associated with UL secondary guarantees bear a faint resemblance to the risks associated with UL before secondary guarantees, but the emphasis is extremely different, particularly when it comes to the persistency risk, the capital risk and, of course, the regulatory risk.

In globalization, there are international accounting standards (IAS). Although there's not a requirement, at least not currently, to comply with ED5, IAS 39 concerning assets is definitely something that we have to deal with. In addition, in embedded derivatives there is an implementation plan to merge these requirements in with and to determine how they impact overall projection of financial values versus traditional GAAP measurements.

I think performance measurement is a topic that is planned for another session. This is a whole different area that is becoming more and more important particularly to determine which appropriate measurement you should take advantage of. Economic value measurement, embedded value, value added—what are the basic underlying drivers that are creating changes in each of these

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measurements? Do you tie it to compensation or bonuses of any kind? Once you've done the measurement, how do you utilize it in practice so it's effective?

I'd like to have people discuss how they are handling the SOP process for the end of this year. In our company, we are currently developing the necessary software through an external vendor. The definition of assessments has changed. We originally were just doing profits followed by losses, but there are losses followed by greater losses as well. The impact of reinsurance on the assessments has to be appropriately determined. What kind of discount rates are you going to employ? There's obviously a difference between gross profits and total assessments, but how do you handle the unearned costs of insurance (COIs) in UL where you are not taking them into income?

In general, the role of the valuation actuary is critical in determining an appropriate corporate posture toward risk measurement and valuation. No matter how the economy will change going forward, the design of new products, particularly in VAs, secondary guarantees and the like, will present even greater challenges to the valuation actuary in the future.

**MR. FRANCIS P. SABATINI:** I'm going to take a slightly different approach. I'll go through it quickly so we can get some discussion going. To change the title a little bit: What are the trends and the implications for the valuation actuary? The environment from a valuation perspective is changing. We're evolving from a framework that was primarily formula-based into one that is much more dynamic and primarily being driven by the environment that we're living in—low interest rates, long-term declining rates, bear market, Sarbanes-Oxley, changing demographics and even things like improving longevity. Of course, today we even have the fear of rising interest rates.

The failings of the traditional valuation techniques are being exposed, which is why we have this heightened interest in what appear at times to be esoteric valuation approaches—AG 39, C3 Phase II and FAS 133. Of course, this is keeping us employed, but it's also challenging our traditional skill sets. What we find is that we're learning new things every day, which isn't all that bad if you like learning new things every day.

What are the implications? We're going to have more dynamic valuation requirements, greater reliance on actuarial judgment (one of the things that Dave hit pretty hard), more resources with different skill sets, increased need for modeling sophistication, greater need for computing power, role expansion into new arenas and graded discipline about the valuation of financial reporting process, particularly implied by Sarbanes-Oxley in terms of documentation, disclosure and education.

A greater percentage of the balance sheet is going to become non-formula-based, and of course AG 39, SOP 03-01 and FAS 133 are just the beginning of that trend.

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The resulting values are now being defined by the methodology, model construct and assumptions. Each of those is going to drive the result. At the end of the day, you don't necessarily have to record the value that comes out of the models on a balance sheet, so there's some actuarial judgment that's going to be brought to bear. One of the nice things about being a valuation actuary is that you can expect increased popularity within your organizations, particularly if people want to see the right result, which I'm sure they do. It also means finding a balance between sophistication, complexity (I want to differentiate that from sophistication), the appropriateness of assumptions and the need to achieve accounting symmetry. All different combinations of these things are going to contribute to period-to-period earnings volatility.

By their nature, stochastic processes or some of the dynamic processes we use to implement these emerging valuation techniques are inherently sophisticated, and it creates the need to worry about whether or not you've done too much or too little in terms of oversophistication. Some of the things that come to mind are not only dynamic lapses in the valuation of a FAS 133 liability like withdrawal benefits, but even a dynamic utilization of the benefit. You can get terribly sophisticated, but I don't know if that adds anything more or less to the valuation, particularly since you don't have any experience to base the valuation on. Understanding the relative balance and value you get from oversimplifying something or overcomplicating it is important to know. If you're too simple, there's the risk of challenge, so you have to worry about the peer review. If you're too sophisticated, you're going to have a hard time interpreting the results. Now you have a new challenge, and it's trying to find that balance between the two.

Next is model complexity. At the risk of stereotyping actuaries as model builders, we historically have had a tendency to feel that bigger was better. I'm not sure size is the critical measure. I think how you construct the model is more important than how big it is. In the age of stochastic valuation, run time becomes an issue. You run the model; you produce the results. They don't look right. You figure out they are wrong, and now you have to wait another 48 hours to get the output again. Streamlining and validating the models is an important part of the process, but at the same time they need to withstand peer review.

The same thing is true with assumptions. You have to worry about the level of support for the assumptions, because, again, you're in a dynamic environment; it's not formula-driven. So the assumption is then an assumption, and you're going to need to defend it. You're going to need to interpret your experience and translate that back into your assumptions. Where you don't have any experience, you're going to have to at least be able to rationalize your assumption. That's another instance where understanding what other participants in the industry are using from a valuation point of view might be helpful in understanding the impact on your valuation results from different assumptions that you make. Of course, this is always an area where you might consider this some sort of lever for management latitude, not that we would do that, would we?

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Once you start dynamically valuing liabilities, in particular when you start implementing hedge programs and things like that on the asset side of the balance sheet, you begin worrying about accounting symmetry. Most of those issues today relate to FAS 133, and I guess to the extent that the international accounting standards become implemented. I guess you could also extend that to SOP 03-01 to the extent that you have a hedge program on the other side. As valuation becomes more dynamic and has a propensity to hedge away guarantees, then a framework is going to make this whole symmetry issue even more problematic.

One of the things that I want to emphasize is that you do really need to develop skills to get the models to do what you need them to do. Many companies today are developing staff members with some unique skill sets around modeling so that they can accomplish the things that they need to do, not just from a valuation point of view, but from a pricing and a risk management point of view. It becomes extremely important. To the extent that you don't have those skills, it makes the valuation process that much more difficult.

In terms of acquiring new skills, we're moving into areas where we haven't been traditionally. We need to develop those skills, either in the staff that supports us, or in ourselves. Typically the trend is toward capital markets issues, credit risk, scenario generations and programming skills.

As we move to a more dynamic valuation environment, at the end of the day it's going to be whatever number the valuation actuary sets, so they're going to have to be able to defend the results against whoever is involved in a peer review process. There has to be increased accountability and increased professional responsibility. I think that's good for the profession, but I think we're going to have to take the time and energy to make the investment, to make sure that we remain as credible as we can.

This is something I always worry about and have to deal with in some of what I do on a day-to-day basis. We're building some terribly complex models for a variety of valuation purposes. The more complex they get, the harder it is to test them and make sure they're producing the right results. It requires a discipline. It requires even things like version control around models. If it's not something that you're doing today, you should think about doing it. You need to be able to reconcile results period to period and understand why the numbers changed. All this increased complexity just puts increased responsibility on the valuation actuary to make sure that what they're getting from the black box is right.

Of course, the more dynamic the environment gets, the harder it gets to communicate with management that might not have the same background or training that we do as valuation actuaries. Finding a way to effectively communicate methodology, helping them understand the results that came out of the black box and finding ways to effectively communicate the implications of different methods

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or assumptions are probably the most important things the valuation actuary is going to do in the future. It's not necessarily something that we haven't done before; it's just that the environment in which we're doing it is more complex than it was in the past.

I believe that communication with external audiences is one of the biggest issues that has emerged in the last year or so. I listen in on analysts' calls. I hang out with analysts every now and then. They're asking a lot of questions. Sometimes they understand the subject well enough to ask the question, but they don't understand the subject as well as you or I may. The more confusion they have about the results that are being produced, the less confident they're going to be in the values that are being placed on the balance sheet. Communicating with them and helping them understand why the values changed the way they have is extremely important. They want to see more frequent reporting; they want to see greater disclosure and transparency. It's a recurring issue. It's going to get bigger and bigger because our valuation techniques are going to get more and more complex. You can see that today in some of the dialogue around VA guarantees and the hedge programs that are being implemented to mitigate that risk.

From a governance point of view, and only from a valuation perspective, testing the validation of models is extremely important. Version control is important, as well as the approach you use from an assumption selection and approval, the control environment that you're working with and documentation in particular, specifically as it relates to Sarbanes-Oxley, are important. Ultimately consistency is important. With the technique that's being used, particularly as these valuation approaches extend across product lines, you're going to have to worry about consistency. There's a guy in product line A doing a valuation who needs to do it on a consistent basis with the person in product line B. You sort of see that today in terms of how well companies are able to coordinate cash-flow-testing exercises. They got pretty good at that, particularly in the larger companies, and everything gets pulled together in an appropriate fashion.

**MR. RICCI:** I have just one question for you, Frank. Something was brought up in our workshop concerning tax deductibility and the new stochastic kind of reserves that are being applied. It's been an assumption in the companies I've worked for that there's carryover there from the traditional measurements. I'm not so sure if you look at the code that you're going to be able to convince the IRS that there is a tax deductibility there.

**MR. SABATINI:** Can you give me an example? For an AG 39 reserve or cash flow testing, I'm not sure I have enough knowledge or expertise on the subject to answer it.

**MR. RICCI:** About the complexity of models, a lot of the models' complexities are being developed in response to the way these new plans are being priced. You have a couple of different shadow funds with different accumulations, and it seems like everything is heavily dependent upon how the premium payments are made. It's

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generally lapse-supported, and there are some critical factors there. It's difficult to simplify without getting rid of nuances that you need to come up with a good idea for the management of the risk.

**MR. SABATINI:** I would argue that you can't overbuild a model. If mortality isn't driving what's going on in the valuation, then I would argue that you don't need 10 age bands. If in fact the pattern of premium we see is a key driver, then I think you need to make those distinctions. The only point I was making is that you need to think about what's going to drive the valuation and make sure that the model accurately reflects it. If it's incidental, then I wouldn't overbuild it.

**MR. RICCI:** I'd be interested in the experiences of those of you out here, particularly in terms of dealing with both the rating agencies and stock analysts, and being able to give them some degree of assurance that the company is following a consistent path to profitability and has contingency plans to maintain that profitability.

**MR. SABATINI:** Let's do a survey. How many people are doing some sort of FAS 133 valuation on the liability? The hands show a lot fewer than I would have thought. Of those who answered, how many feel that that's a challenging process? It looks like almost everybody that raised their hands before are raising their hands, which is the point I was making earlier. How many people are doing an SOP 03-01 calculation? Are you finding it relatively easy or is it difficult? It looks like not as many—about half.

**MR. RICCI:** Of those of you who are doing SOP 03-01, how many are relying on outside vendors for help? It looks like just one or two. Do any of you have any comments concerning the exponential increase in resources required to satisfy the Sarbanes-Oxley requirements? I know this is an issue that really impinges on my staff. I was wondering if there are those of you who have a similar issue in Sarbanes-Oxley.

**MR. VINCENT TSANG:** Let's assume we go through with the AG VA CARVM, and we hold 65 CTE as the reserve. Let's assume that this company has some reserve adequacy issue with respect to the general accounts, but in a separate account, because we are holding 65 CTE, there may be some implicit margin in the separate account reserve. Is it reasonable to use the margin in the separate account to offset the reserve deficits in the general account?

**MR. SABATINI:** I'm not sure I fully understand the question, but let me see if I can restate it. If I hold a CTE 65, and it's greater than account value, I would expect that that excess reserve would be held in a general account. In a cash-flow-testing context, I think that's a different determination. You might be looking at a different point in the distribution. But I would think if you had a redundancy in doing a VA asset-adequacy analysis, I don't see why you couldn't use that to help satisfy a deficiency somewhere else, so long as the regulator permitted you to do



that.

**MR. TSANG:** My argument is if you have your business in a separate account, it's supposed to be segregated from your general account. I'm not sure it is reasonable having the reserve on a segregated portion and mixing it back with the general account. That's why I asked the question.

**MR. SABATINI:** I'd be interested to see if anybody had a view on that.

**MR. CRAIG F. LIKKEL:** This is just a follow-up on that Sarbanes-Oxley topic. I admit I'm not really up to speed with the types of documentation requirements. What is the most definitive description of the kinds of things you need to document, focusing on an actuarial valuation process? Are there guides published by the big five accounting firms, or is there some other generalized description of such documentation requirements?

**MR. RICCI:** I would separate the requirements into two categories—controls and procedures. Often there's a movement between one operating system and another. Maybe you're on LifeCom, and you're moving to PolySystems or something like that. You have to be more or less confident or be able to show that you haven't dropped any policies along the way, or, if you have, that you know what the policies are and you're accounting for them accurately. That's control. Then you need the overall procedures to determine that you're going through the appropriate steps to come up with the appropriate valuation.

**MR. PATRICK D. STUDLEY:** I want to comment on Vincent's question. Since the stochastic kind of reserve is now on AG 34, it is still CARVM. We accounted for it as a reduction in the CARVM credit on the separate account, and so that directly passes into the general account. I think it's fully integrated with general account reserving.

I'd also like to ask a question. How do you test the adequacy of that general account reserve under the seven New York scenarios? I do believe it has margins, and I'd like not to lose that margin when I'm looking at it by itself or annuities in aggregate or a company in aggregate. If you have seven interest scenarios, you could imagine that for each one of them you have to run a large number of stochastic scenarios, but I don't know that that's the right answer either.

**MR. SABATINI:** That's a great point. It's a circuitous issue, because the AG 39 calculation in itself is an asset-adequacy calculation. I think if you've done one, you've sort of done the other, except the AG 39 calculation is just on the core guarantee, on the guaranteed element. If you did an asset-adequacy analysis on the entire contract, you'd get the benefit.

**MR. STUDLEY:** I've been thinking that the AG 39 reserve is a stand alone by itself calculation, but the AG 34 for guaranteed minimum death benefits (GMDBs), for example, is really to me a stochastic formula for the whole reserve. That includes

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everything in it, not just the death benefits.

**MR. SABATINI:** But the asset adequacy is a valuation in the entire contract.

**MR. STUDLEY:** Right, and you bring assets in, but it's not a test of the reserve. The formula is now a stochastic formula, and so you now have to opine on the adequacy of your reserves at some level. You have to bring that in to the asset adequacy. We called it other methodologies. We didn't put it in the cash-flow-testing category, because we could not show results by seven scenarios to New York. If we couldn't do seven scenarios, we couldn't call it cash-flow testing. We put in another methodology and we said this methodology by its very nature proves it's adequate. But I wouldn't mind counting margin on the cash-flow-testing category.

**MR. RICCI:** It doesn't shoehorn very well into the seven scenarios, but I would think that you would be able to reasonably get credit for it regardless, depending upon demonstration.

**MR. SABATINI:** In your asset-adequacy process, if you moved away from the seven scenarios, you're right, you would have to somehow create corresponding equity market scenarios for the seven and then be able to defend them. There are techniques that you could use that allow you to define seven equity scenarios that are consistent with the seven interest rate scenarios. That's one approach. Another approach is to do multiple equity scenarios for each interest rate scenario, or you could just use a multi-scenario approach to the asset-adequacy question. If you use a multi-scenario approach, you should probably be able to demonstrate adequacy in the reserve. I think it becomes a mechanics issue, or, as you pointed out, it ends up being a geography issue.

**MR. RICCI:** Can we raise any debate on this whole AXXX, AG 38 as it now stands? Right now, there are three different proposals out there. It's a sure thing that by the end of the year, the New York proposal will be operative for New York companies, which tends to cause a loophole concerning the UL with secondary guarantees. What's the general feeling about trying to come up with a more reasonable solution? The issue in my mind is that you have a reserve that's generated by AXXX, the application literally to AXXX as intended by some of the regulators, and you have something using a low ratio that produces a much smaller reserve. Somewhere in between those two is the so-called economic reserve required under a reasonable gross premium valuation. The difference between the three is so great that it's going to create a real economic difference in the companies that are applying them. This appears to be an issue that will not go away very soon and probably will come to a head in application, if not by the end of this year, then by the end of next year. The issue is compounded to some degree, because I believe some states have approved products with stated reserving guidelines intended to make use of the secondary guarantees to reduce the reserve rate. A lot of regulators are saying that doesn't mean anything; when it comes time for you to submit the reserves, then they're still up for our approval. How many

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people are working heavily in this area with regard to AXXX? It appears to be just a few.