RECORD Volume 30, No. 3*

Annual Meeting and Exhibit
New York, NY
October 24-27, 2004

Session 138 PD
Equity Product Accounting Approaches

Track: Financial Reporting

Moderator: Jonathan W. Porter

Panelist: Charles Dana Tatro†

Summary: Panelists discuss the various approaches different entities take with respect to equity product valuation for financial statements and risk-based capital measures. Specific topics include Canadian asset-liability management AGAAP/Statutory valuation Canada, Canadian minimum continuing capital and surplus requirements approach to determining capital adequacy for segregated funds, U.S. statutory guidelines for life and annuities reserves, U.S. capital adequacy using risk-based capital C-3 Phase II and U.S. GAAP.

MR. JONATHAN W. PORTER: We had a couple of late cancellations of speakers. The good news is that Dana Tatro was kind enough to volunteer to fill in and keep the session alive. The bulk of our session is going to be focused more on the United States, given that's where Dana's expertise lies. The people who were originally scheduled to present were definitely Canadian GAAP (CGAAP) experts, but we will have some high-level comparisons of CGAAP and Minimum Continuing Capital and Surplus Requirements (MCCSR) with U.S.-based methods. Both Dana and I have some experience with Canadian GAAP and MCCSR, so we'll do our best to answer any questions that may come up during the session.

Without further ado, let me introduce our speaker. Dana currently works as a

†Charles Dana Tatro, not a member of the sponsoring organizations, is vice president and consulting actuary at Actuarial Strategies in Bloomfield, CT.

consultant for Actuarial Strategies. He specializes in variable annuity (VA) and variable life pricing evaluation. Prior to this he served as chief actuary of All America for two years, and before that he worked for Manulife Financial for 11 years in various capacities, including being pricing officer for our VA business.

MR. CHARLES DANA TATRO: Since I am the only speaker and we have a panel discussion, it will be interesting. I don't have two hats to wear or anything else, so I'm going to present what we have on the U.S. and Canadian sides, and we'll leave it at that. It's a high-level overview. We had several sessions in the SOA meeting that delved into the details of some of the things that I'm going to talk about. Probably in hindsight this session would have been a good precursor to those meetings, but instead we have it here at the end. If you're looking for an in-depth interpretation of anything that I'm going to talk about, you can either ask some questions or come up after the session and we can discuss them, but I didn't cover them in the presentation today. The presentation is meant as an overview of where we are currently with equity products, how they're accounted for and where are we going, as far as the shift from a deterministic approach to a more dynamic, economic-based approach.

In the current U.S. framework, we have statutory accounting and GAAP accounting, and they don't speak to each other, as you all know. Statutory accounting is balance-sheet oriented. It's for the regulators to determine the solvency of a company. The assumptions that we use when we do our statutory accounting are by nature defined to be conservative, so that we make sure our policyholders are protected. There aren't a lot of economic-based assumptions that flow into that.

GAAP accounting is a little different, as you all know. It's a little more economic-based, designed that way, obviously, by the accountants, but it still uses deterministic assumptions for the most part. It uses more of a best-estimate style of assumptions in order to make it a little more economic-driven. Again, this is probably nothing new to you.

With that in mind, on the statutory side for VAs, there are three main actuarial guidelines that you have to worry about. They are Actuarial Guideline (AG) 33, AG 34 and AG 39. AG 33 is basic Commissioner's Annuity Reserve Valuation Method (CARVM) for VAs. It sets out your expense allowance. It usually declines with your surrender charges. It's very deterministic and doesn't really cover the products that we have out there today. It's a simple approach to coming up with an expense allowance for a VA and amortizing that over the statutory balance sheet. It has been in place since the 1980s, if I remember correctly.

Because of the downsides of AG 33 and the advent of death benefits that came on VAs, AG 34 was written. Guideline 34 specifically addresses the death benefits. You have several different asset classes. They all have a deterministic drop and recovery based on the asset class that you're modeling. The theory behind coming up with the drops and recoveries is that a stochastic program was run to figure out

approximately the 83 one-third-percentile event from a distribution. That's where they came with this drop and recovery. It's still a deterministic approach and doesn't really handle the benefits that we have today. As a case in point, if you look at a return-of-premium death benefit, which only guarantees the principal that's put in, and a maximum anniversary death benefit that guarantees a high-water mark, usually on the contract anniversary, at the point of sale both of those benefits produce the same reserves. Intuitively you would think that it doesn't make any sense because, for a return of premium, if all you're guaranteeing is premium, that reserve should be lower than something that can ratchet up in the future. But because of these drops and recoveries, it doesn't work out that way at all, so it doesn't get at the heart of the benefits and how they're going to react.

Shortly after AG 34 came out and the death benefits started taking off, we came up with wonderful ideas for guaranteed minimum income benefits (GMIBs), guaranteed minimum withdrawal of benefits (GMWBs) and guaranteed minimum accumulation of benefits (GMABs). Unfortunately, those didn't fit into the current reserving framework. To get something in quickly, they came up with AG 39, which is a simplistic approach to reserving for living benefits, with just a retrospective accumulation of charges. But again, it doesn't tackle the nature of these benefits and handle the risk profile of these benefits well.

These are all deterministic approaches and simplistic. They worked well for a while, but now that benefits are getting more complex, there are more equity risks. Now that you have different sector funds and a gamut of investment portfolios in which people can invest, these things are becoming a little out of date. I think everyone knows that. That's why we have this promulgation of C-3 Phase II and VA CARVM, which we're going to talk about a little later.

On the life insurance side, not a lot of things are different between that and annuities, except that you have Commissioners Reserve Valuation Method (CRVM) as your basic reserve, with which we're all probably familiar. We have AG 37 that came out to handle the death benefit guarantees and the no-lapse guarantees on these products. Again, it's a deterministic approach with AG 37. You take the greater of your attained age level reserve (AALR) and a one-year term reserve. A one-year term reserve looks a lot in my mind like AG 34. You have a one-third drop and project what your term cost is for that year, and that's part of your reserve. The attained age level reserve essentially isolates that piece of your death benefit that exists solely because your guarantee is in the money. It isolates that, adds on an additional liability and then tends to amortize that over future years so you don't get some wild upswings on the attained age level reserve.

Continuing with the current framework (we've just covered the reserve side of it), we're now going to talk a little about the risk-based capital (RBC). Again, the RBC approach for years has been formulaic and asset-driven, based on the asset classes that you're holding to back your liabilities and based on the type of liabilities that you have on the books. It's a factor-driven approach; you've probably all seen the

NAIC blank that you have to fill out every year to come up with your RBC requirement. Separate account assets historically have never had a big RBC requirement applied to them. I believe it was C-4 that companies would hold against it, and even then they said, "Maybe we'll throw 50 basis points on here as a capital requirement on top of our reserves," and we went through. That is obviously inadequate, given today's benefits and given the risk exposure that companies are assuming on these types of benefits. As a result, we have the implications of C-3 Phase II. I believe there was a session on C-3 Phase II before this one, so we're going to talk high level about that and not get into a lot of the details.

On the GAAP side, the main pronouncement is FAS 97, which again is deterministic. You have your estimated gross profits (EGPs) that you may throw out there at some deterministic growth rate. You figure out how much deferred acquisition cost (DAC) you can write off and how it's amortized. You unlock your expenses because it's an investment contract. It's not at all integrated with the statutory accounting approaches. On the FAS 97 side on the DAC, there are some companies that use a reversion to the mean. They've implemented that. Various types of methods have been used. Some of them did not have any caps and floors on the rate of return that they would assume during the reversion period. As a result, if you looked at periods from 1999 through 2001 when the market dropped, some companies sat back and said, "If I earn 45 percent over the next three years, I won't have to unlock anything right now because I'll get back to my 9 percent growth rate that I put into my calculations."

That didn't fly well with auditors. I don't know when we saw 45 percent over three years, but it has been a long time. They started putting collars around those to try to isolate when exactly they would unlock. Some methodology for that is that they would look at their portfolio and the nature of the funds that they held, and they said, "My mean is 8 percent, and I have a standard deviation of 30, so what I'll do is go plus or minus one deviation," or something like that. They would come up with an actual collar around what was an acceptable return level. Whenever they went out of that collar, that's when they decided that they would have to unlock and either write down or write up their DAC balance. But again, it wasn't a consistent method; it was a deterministic method, and it varied from company to company without any real pronouncement on how it should work.

I went to another accounting session. I think it was "U.S. GAAP" or something like that. I now heard that we can no longer call the Statement of Position (SOP) O3-1 the "new" accounting standard. Apparently it's now the "old new" accounting standard; that was the term that was used in the presentation. We'll talk about it quickly here. It was effective December 15, 2003, for the fiscal years that occur after that. It covers FAS 60, 97 and 120 products. I guess there is a new pronouncement out there, the Emerging Issues Task Force (EITF), for SOP O3-1. I don't have that covered in here; I'm sorry. There is one other new one as well that's on the drawing board and slated to be adopted at the end of 2006. I think it has to do with internal replacements, but again, I'm not going to talk about that

here. That applies to all products, not just the equity products.

Let's talk about the key items of interest that came out of SOP O3-1. It set out the conditions that you had to meet in order to account for your separate account liabilities as a true separate account at fair value rather than recording them on your balance sheet. The conditions were all pretty straightforward, but this is the first time they've been pronounced as being what needs to happen. One, your separate accounts have to be legally recognized. Two, the assets in those separate accounts have to be separated from the general account liabilities of your company. Three, your contract holders must direct the investment strategy that's available in this separate account, and four, all the performance from those separate accounts *net of fees* has to be passed to the contract holder. As long as all those conditions are met, your separate account assets and liabilities can be valued at fair value, and they're not considered for general account assets.

There is another set of disclosures required from this. There are some separate account disclosures that have to be filed and various other disclosures about the liabilities that you're assuming as a separate account liability. It clarified what portion of the account value was to be recorded as a liability when you were doing your evaluation. Typically it would be the value that's available to the clients prior to any surrender charges or market value adjustment and any accrued, but not yet credited, benefits that the clients had available to them. Again, it was more or less a clarification of what companies were probably doing anyway, but this set it out so that the companies could be a little more uniform in their handling of these issues.

One of the things it did that is causing a lot of problems is that it tried to clarify mortality and morbidity to classification so that you can determine whether you had an investment contract or a universal life (UL) contract. Are you truly a FAS 97 contractor or are you a FAS 60 contractor? The determination was based on a present value of benefits in excess of your account value as compared to the present value of your charges. If I think back to the actual terms, I think it says that if your insurance liability varies dramatically with a separate account, it's an insurance product unless you can prove that your charges flow in relation. There's a lot of confusion around here, and again, that was addressed in another topic.

Unfortunately, I can't go into a lot of detail here because I'm not sure of the issue. I've never had to deal with it in this pronouncement so far, but I know that a lot of companies have been a little confused over the wording that's associated with whether or not you have an investment contract or a UL contract. It defines sales inducements as a liability to be accrued over the period that the contract is in force, so that would be your bonus amounts, any kind of credited bonuses that you would give. It also defined how deferred inducements were to be treated as a liability. You were supposed to amortize them over your EGPs just like you would your DAC, except instead of being held as an asset, you hold it as a liability.

Probably the biggest point of SOP O3-1 that I found interesting was that it finally

defined how you should calculate the liabilities for any guaranteed benefits that you have. It defined a methodology that works well. It's a great methodology for death benefits, no-lapse guarantees and annuitization benefits. We're going to talk about this in a minute. Typically what companies were doing before, if they had guaranteed benefits on their products, is that either they convinced their auditors to allow them to hold some portion of the fee back in their EGP stream and maybe build up a little bit of reserve that they could release (sometimes they would offset that with the actual payments that would come out of these benefits), or they would just do nothing at all because they couldn't convince the auditors that there was an expected cost to these benefits and you should be holding something in relation to the actual costs.

But with this additional liability, there's now a set standard that we can follow in order to determine that liability. The liability is calculated first by coming up with this benefit ratio (BR). The BR is the present value of your cumulative actual benefits plus expected excess benefits over your cumulative actual assessments plus your expected total assessments. That's your BR for the year. Your additional liability is that BR times your actual assessments, less your actual payments, accumulated with interest. What it's doing is adjusting this reserve, if you will, based on past results and where you think you're going in the future. You would have to unlock any time your future results differed from what you expected when you projected the present value. It flows nicely. It has some methods of smoothing that are inherently built into it. It works well, and the best thing is that it gives us a liability that we can put on the GAAP balance sheet so that we're not running actual claims through the GAAP statement as they materialize.

The SOP does state that this liability is to be valued over a wide range of assumptions. That can be a set of stochastic scenarios or representative scenarios. This is the first thing that I've seen written down that endorses a stochastic methodology for use with any kind of guaranteed benefits. It doesn't talk about using a stochastic methodology with DAC; however, you're going to have a disconnect here. You still have your DAC that's based on this variable payment stream because of the assets that you have in a separate account, and all your fees are going to be earned based on those assets and the amount of DAC that you can establish, but now you can determine that liability over a range of scenarios to come up with how much you hold and how those get released. I thought it was interesting that we now start seeing this stochastic idea creeping into what used to be a deterministic methodology for doing our GAAP statements.

Testing a range of policyholder behavior assumptions may be required. I don't think it's specifically stated in the SOP, but if you have to test over a range of assumptions, I don't see why you wouldn't want to test over a range of policyholder behavior assumptions as well—dynamic lapses, dynamic withdrawals, dynamic annuitizations—based on the underlying set of returns that you're using. As I stated before, the liability gets unlocked whenever actual experience differs from your expected.

They do go on to state when this BR should be calculated and for what types of benefits you should be establishing an additional liability. Typically I think they're worded as "the contract contains a benefit feature providing an amount in excess of the account balance." You should be establishing a liability for that. If it's classified as a FAS 97 UL contract with fees and benefits that are not fixed and guaranteed, they say you should establish one for that. The one that is also getting a lot of questions is that a liability should be established if expected charges assessed will result in early year profits followed by subsequent losses. It was stated in the last session that dealt with SOP O3-1 that that does mean profit and losses. It does not mean profits followed by lower profits. That is specifically not addressed in the SOP.

What all those wonderful terms mean is that you're going to have liabilities for your guaranteed minimum death benefits (GMDBs) on a VA and for no-lapse guarantees on UL and variable universal life (VUL) products. Long-term-care riders on deferred annuities, earning protections benefits and any GMDB that's provided by a mutual fund or another noninsurance contract technically should have an additional liability set up for these benefits in the GAAP statement.

Let's move on to something that I know a little better than SOP O3-1, which is C-3 Phase II and VA CARVM. As Jonathan mentioned, I used to work for Manulife, so I grew up in the Canadian world. I knew the Canadian requirements well four years ago, but they ebb away as you start learning these new ones. One of the things that struck me is that these are close to the Canadian requirements. As a matter of fact, if you ask people on the task force, they will state that they looked at the Canadian methodology and read through it when they were coming up with the methodology here for C-3 Phase II.

Currently it covers only VAs. It will probably be expanded to VULs as things go forward, but right now they're just trying to get it implemented for the VA side and see what it takes to do that and what the implications are for it. Like SOP O3-1, it's a stochastic approach, so again, we're departing from this deterministic approach to a stochastic approach. This is going to have some big implications, not only on implementation issues that you'll face when you're trying to put this in place, but also on your explanations to your auditors, to your regulators and to your ratings analysts. It's a new world out there with a stochastic approach because it does not lend itself easily to projections such as what it will look like next quarter, what the impact of a 10 percent increase in mortality will look like or what the impact of another 20 percent drop in the market will look like. It doesn't lend itself to any kind of benchmarking where you can say, "This company has this type of VA, so that capital looks correct."

From a regulatory standpoint, it's going to be interesting how they view your capital: how they ascertain whether or not it's calculated in accordance with the methodology that has been proposed, how they view the methodologies that you used and how they're going to view any changes in that as you go forward. It's

going to be a volatile period with a stochastic approach as we go through projecting out C-3 Phase II and as we move forward from one corridor to another as the changing market values affect which scenarios drive your capital and reserve requirements.

Is everyone here familiar with C-3 Phase II? Most of you are familiar with it, so we'll go quickly here. The VA CARVM piece of this sets the reserves at the 65th conditional tail expectation (CTE). You're all familiar with the 65th CTE and what a CTE is. C-3 Phase II ignores federal income tax. It provides a seriatim calculation with a floor on each contract, which is going to be different from what we're going to look at when we get to the total asset requirement (TAR). Here they're flooring what that reserve is on each contract, so it's a different aggregation level. For the reserve piece, it's the greatest present value of accumulated statutory deficiencies. You have to project your cash flows, your benefits, your expenses and your commissions and then discount all those back, and it's the greatest present value of that deficiency.

On the TAR side, they're using a 90th CTE, and again, it's a modified CTE approach. This is after tax, so we have reserves that are pretax, and we're calculating a TAR that's after tax. We're using the lowest present value of surplus. That's what you have to hold. Again, you have to basically run through your entire statutory blank, come up with your surplus requirement and take the lowest present value of those. That's what you need to hold as your TAR. Capital is the difference between that number and your reserves. That's what you're holding in capital.

You're all probably familiar with the modeling approaches. They developed 12 asset classes that you can use. There are 10,000 scenarios in each one of those asset classes. You can develop your own scenarios as long as your model meets the calibration requirements that are in the proposal. You can use the alternative method. As a matter of fact, you have to use the alternative method, as it's proposed right now, for reserves and capital. You do your modeling if you're going to do it or you do the factor approach (we'll talk about that shortly), and then you have to check it against this floor as it's proposed. Whether or not that floor is appropriate is causing a lot of discussion within the work group. The alternative method is a list of 80,000 different factors from which you can choose, which makes it easy for you to ascertain which factor goes to your benefit. The standard scenario is the one that I just talked about. It's the floor on your capital and your reserves that you wrote through.

If you choose modeling and you're not going to use the alternative factors, for the TAR it's best-estimate assumptions plus provision for adverse deviation (PAD). It's the same thing for the reserves. You can reflect your hedging and reinsurance. You have to use some dynamic assumptions in there as to lapses and annuitizations. The thought on mortality is that you can use 65 percent to 100 percent of the table. There are two recommendations out there. One is saying to use 65 percent, and the other one is saying to use 85 percent. They're giving the company some leeway on what percentage of that table it actually uses. You have to model all your product

cash flows, which is different from Canada, as we'll see.

We already talked about its being the greatest present value of statutory deficiency. There's a proposal out there that not only do you have to hit all product cash flows, but you also have to use any investment management revenue that you get off the funds themselves, which are usually considered outside of the scope of any kind of pricing. That's the difference between your subadvisory fee and your actual management fee. Usually it's anywhere from 10 to 50 basis points, in some cases. There's a proposal out there that those should also be brought into the mix and modeled under the C-3 Phase II as one of your cash flows. I don't know how much support that's getting or where it's going to go, but I did hear it is out there.

The alternative method is used only for VAs. These are the 80,000 different factors that I mentioned before. They can be used only with VAs with a GMDB on them and no other guarantees. They do not have factors out there for GMIBs, GMABs or GMWBs. There are 80,000 nodes with three factors each. The three factors for each node basically include your expense allowances, your capital level and your amortization piece, if I remember correctly. Again, it's a seriatim calculation. You can use some groupings, but I think a lot of people are leaning toward something more seriatim if they can do it. It's expected that these will yield higher results than if you were to do modeling on your own. It's going to be a choice for companies depending on the size of the block and their resource commitments, whether or not they can do the modeling and want to run through a stochastic scenario of their block of business, or if they're going to try to just apply these factors to it and maybe have a slightly higher capital requirement, but the offset is a lower resource commitment and less model run time.

We talked about the standard scenario as a single scenario for capital and reserves. I believe they are different scenarios: one for capital and one for reserves. At the reserve level there's no aggregation, so it puts a floor on each contract, and the floor applies on a seriatim basis. I think that the standard scenario was put in as a guide to judge whether or not the modeling is producing reserves and capital on an acceptable level and trying to put some consistency among companies to make it a little easier for regulators, analysts and other interested parties to determine whether or not the modeling done by different companies with similar blocks of business is reasonable. You do not want to get one company with one block coming with a dollar of capital and another company with a similar block coming up with 20 dollars of capital.

In Canada, as we'll see when we talk about it, they don't have the standard scenario. That's an important distinction. I think it was proposed by the state of New York; it wanted the standard scenario in there. The state of New York has a lot of weight, and we'll probably see some version of the standard scenario come out and be approved. I would go out on a limb and say that once people get familiar with this, and it has been done for a few years, you might see a push to get rid of the standard scenario because why would you go through the modeling effort and

come up with a robust capital and reserve methodology and then have a standard scenario come in and override it? It seems like a lot of work just to override it. That's a personal view and not a view that's probably shared by a lot of people on the committee.

There are additional certification requirements that came with C-3 Phase II that you have to worry about. You have the normal one that your reserves are calculated in accordance with the accepted principles, but there is also a material change certification requirement. If you have any material change, that has to be documented much like any asset adequacy testing. The newest one is probably a hedging certification that your hedging program is clearly defined, it's understandable and your model does not include any foreknowledge of hedges or how those hedges are going to interact with your resulting return scenarios when you run them through their model. I take that "foreknowledge" to mean that you can't look at the capital scenario, say that it would come down by 50 percent if you bought this hedge instead of this hedge in this situation, do that, rerun the model and come up with a lower capital requirement. You're supposed to take whatever your defining strategy is and run that through no matter what, even if an alternative strategy would have produced better results. You have to use the strategy that you've currently defined and have submitted to the states. I do think that states are going to take a close look at your hedging strategies, which will probably be another source of pain for describing and defining that hedging strategy and getting the regulators that you're working with up to speed on the strategy that you've put in place.

There is a proposed smoothing method out there. I don't know if it's going to be brought in, but in my experiences in working with MCCSR, the capital can be volatile from one period to another. You can almost look at it as how AG 34 is now. It's a volatile reserve piece, depending on where your current ratio of your benefits is to what your current account value is. If they leave it as is without a smoothing mechanism, it's going to be interesting to see how regulators react and senior management reacts when you walk in one quarter and say that you have plenty of capital, and then we have a market drop and you walk in the next quarter and say that you're not so good, you lost, and you'd like an additional $20 million of capital to keep your ratios up. Then you come back the next quarter and say that you don't need it anymore because the market came back and you're fine.
There can be some big fluctuations here, especially if we hit a period like that from 1999 to 2001 again. We have to make sure that everyone is aware that these fluctuations can occur and try to explain them the best we can, especially with rating agencies that tend to get a little jumpy when your capital levels drop. I'm sure that you're all familiar with it. If they drop more than a certain percentage—AM Best, Standard & Poor's and Moody's all have different percentages that they go by—ratings agencies start to get a little worried. Regulators also get a little worried if you have a significant capital change. If you're in a capital position in a growing company where you're already on a watch list because you're a growing concern, you're putting a lot of business on the books and then you hit a volatile period of

time and have a lot of capital fluctuations, while they may have been anticipated and while you may have had plenty of capital there to support it, this volatility is something that's going to need to be explained and hopefully worked through as we go forward.

The proposed smoothing ratio that's out there is a ratio to apply to your end-of-year cash values to smooth that TAR—not just the reserve piece or the capital piece, but the TAR. The factor is f, which is currently 0.2 in the first year, 0.4 and then 0.6 thereafter. It's f times the TAR divided by your cash value, plus (1-f) times the prior year's ratio. That's how much you let flow through the balance sheet each year as your TAR. I'm not sure if it's going to get put into place. It makes sense that there is smoothing out there, but I wouldn't be surprised if we don't see that in the final draft, at least not in the first go-around.

It was supposed to be adopted by the end of 2005. I think they're on track for that. They're pushing hard for that. There's a lot of support for it, so I don't see it getting held up again. For reserves, it applies to new and in-force contracts for business issued after 1980. For RBC, it applies to all new and in-force contracts. Again, there's a little difference between types of contracts that you can have on the books and whether you have to calculate the RBC in accordance to stochastic results or whether you're doing reserves according to the old method.

As far as documentation, you've got to document the method used, whether you did the modeling, used the scenarios that were provided or used the alternative factors. You have to have a description of the scenarios in your calibration that you put into place if you're doing your own modeling. You have to show the standard scenario results no matter what. You have to document your hedging method and the assumptions that you used in the hedging program.

Let's talk about some similarities between the Canadian method and the U.S. method. As I said before, the Canadian method and the U.S. method are similar. Both use a stochastic projection, obviously. Both of them have calibration tests, both at the lower end of the tail and at the higher end of the tail, to make sure that your model is meeting the requirements that are put forward. Both use best-estimate assumptions with PADs, and both project all the product cash flows. Canada is a little different there, but for the most part they both project all the product cash flows. That's about as far as the similarities go.

I have one comment on why these similarities end. In Canada there's only one regulatory body, the Office of the Superintendent of Financial Institutions (OSFI), so it was a little easier to get things approved, rather than going through all 50 states to get them approved. Canada seems to put a much greater reliance on their actuaries than the United States does. That's just a personal observation that I've seen between working for a Canadian company and a U.S. company. As a result, Canadian actuaries have a little more leeway in determining the appropriate way to measure their liabilities for the benefits that they have on the books.

There are differences on the TAR. MCCSR uses the 95th CTE, while the United States uses the 90th CTE. While that's a pretty big difference, there are some calculation differences in there as well that may close that gap a little. I don't have any specific numbers, but intuitively I think it might close the gap a little. In Canada, when you're doing your total balance sheet requirement (they call it a TBSR instead of TAR), you bifurcate out your benefit piece, so all you look at is your benefit. In the United States, you use all of your product cash flows in there. As a result, if you were to run them side by side, you're going to get different levels, depending on the method that you use for the same underlying investment scenario, because of those differences and what's being pushed through that calculation.

On the reserves side, the Canadian actuary has far more leeway in setting the reserves. As long as the reserves fall between the 60th and the 80th CTE result, it's left up to the company as to where they set those reserves. It doesn't mean that the company can set them at 80 this year, 60 next year, 65 the year after that and 75 the year after that. They have to show the regulator some consistency, but they have much greater leeway in determining what that reserve is going to be. In the United States, if the proposal is adopted, it's the 65th CTE; if the proposal isn't adopted, it's back to our current levels. The United States is a little stricter on where you can set your reserving levels.

As far as the modeling approaches, MCCSR uses present value of just the benefit cash flows, as I pointed out. The way that you do that is that you assign a margin for offset (MFO) for use in your benefit reserve and capital calculation. Say you have an annuity product that has 200 basis points of base fees and a GMIB rider that has a 50-basis-point rider fee associated with it. In Canada, to calculate your benefit costs, you would say you have 50 basis points of revenue, and you have this benefit cost over here, and those are all that you're going to model. You bifurcate the two and send it off. You come up with your fee and your capital requirement. That is used that way because there's more integration between this benefit calculation and their underlying DAC calculation, which we'll talk about going forward. In the United States, as we already talked about, it's the present value of your greatest statutory deficiency or your lowest statutory surplus. Again, it's a little more complex than what the Canadian methodology has put forth.

On the assumptions side, they are both with PADs with best estimates. In the United States, I don't think they really discuss how you should set your PADs and how you should determine those pads. In Canada, you have to clear how those PADs are set with OSFI. The main point in Canada is that your capital and your reserve PADs can be different. The methodology that's currently employed is that you run your capital with the same PADs that you use for reserves and then you run them without PADs, and you take the greater of the two results.

Again, that's due to the interaction with DAC because a PAD that may be conservative for reserves and capital may not be conservative for DAC. They want

the capital levels set more at a DAC assumption level, trying to have consistency in modeling between your DAC that you're going to hold on your CGAAP statements, the reserves that you're going to hold and then your ultimate capital level. You have to run through that calculation twice, once with PADs and once without PADs. Your reserve PADs are fairly conservative. Again, in the United States I'm unaware if the topic (whether your PADs can be different, whether they should be different, how you should calculate them or how they should be set) is addressed anywhere. In Canada, there's a prescribed method.

The other big difference, which is a little more intuitive, is this idea of fee capital that's out there in Canada. It states that even if you don't have any benefits on your VAs, the fees that you collect may not be sufficient to cover your fixed expenses—the expenses that you incurred writing and putting the product on the books. There's a fee capital element there. In the MCCSR world, it's explicit because they use a stochastic DAC, and those stochastic DAC assumptions are the same assumptions that you use on your TBSR. They already take out this margin for offset, so they said that if you have a rider fee that's 50 basis points and you're going to use that to offset benefit costs, you can't use that to run your DAC. You've stripped that out, so you can't use that. Are those 200 basis points that you have left sufficient to run off your DAC balance under these scenarios? If not, you have to hold up fee capital.

In the United States, fee capital is a little more implicit, but I do believe that it's there intuitively because you're modeling all the product cash flows and all your product revenues that are coming in. I think implicitly you're not separating out the two benefits, so if your total asset fees are not sufficient to cover off your amortization of your expenses and your expenses that you've projected on to the future, built into your TAR is going to be a provision for fee capital, whether it's explicit or not. The difference is that in the United States if you don't have any guarantees on your VA, you don't have to do this at all; there's no fee capital associated with VAs that do not have guarantees on them. However, in Canada, technically if you don't have the guarantee, you still have to test for this fee capital to see whether or not you have additional capital that has to be held. MCCSR is explicit that you have to do this. In the United States, it's kind of implicit, and I'm not sure that has been addressed anywhere. Intuitively, I think it is correct.

There are hedging differences. In Canada, the current proposal is that you get 50 percent credit for the hedging program that you have in place. That's it. In the United States, I think it's still undecided. They bounce back and forth between full credit to partial credit to credit only for the hedges that are on your books so you get some credit if the hedges are clearly defined and we can understand them. I think that's still in a minor state of flux. If it has changed, I'd be interested in someone stepping up and clarifying that for the group.

On the integration side, as we spoke about before, Canada has one accounting system, one regulatory body. They want everything integrated. As a result, it's

clean and nice for the actuaries because they don't have to deal with two different accounting bases and multiple different methods that they have to use. In the United States, there's no integration at all between the capital that they're setting here stochastically and then the stochastic assumptions that they're going to use for their DAC, if they do use it, and then the integration between GAAP and statutory accounting. It will be interesting to see what happens in the United States as things go forward, especially with international accounting standards coming to the forefront and, as more international insurers get a greater presence in the United States, the pressure that they're going to put on regulatory bodies because of the additional resources they need to calculate these things over a multitude of accounting bases. It will be interesting to see how we progress in the future, whether we go to a one-approach accounting system, with maybe a federally regulated insurance community.

One of the other major differences is the actual model approval process that you have to go through in Canada. In the United States, once your model is calibrated, you're good to go. You document that your model is calibrated, and that's all you need to do. In Canada, OSFI reviews the systems that you're using. You have to not only show that your model is calibrating, but you have to subject your model to review, so they can see the inner workings of the model. Again, that works for them because it's one regulatory body that you're dealing with, not 50.

MR. PORTER: When you're talking about the BR for SOP O3-1, what happens if the BR goes over 100 percent? Do you have to set up a deficiency reserve for all those future losses that you plan to take because your BR is above 1?

MR. TATRO: That's a very good question, and I do not know the answer to that. I haven't seen anything in the guideline that constrains that ratio.