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GAAP Reserves & Sales Inducements under SOP 03-1

Instructor: Darryl G. Wagner

Panelists: Patricia E. Matson
Robert G. Frasca

Summary: This teaching session covers the practical aspects of implementing GAAP reserves and sales inducements under Statement of Position 03-1 (SOP 03-1) on Accounting and Reporting by Insurance Enterprises for Certain Nontraditional Long-Duration Contracts and for Separate Accounts.

MR. DARRYL G. WAGNER: We're not going to spend a lot of time with the basic concepts, although I think we will cover the basics. We want to spend more time on the practical implications. Recently the AICPA or Financial Accounting Standards Board (FASB) released a technical practice aid (TPA) relating to the SOP 03-1. This is the second piece of additional guidance that's come out in the last six months. There was the FASB staff position (FSP) that came out in the spring, and our panelists are going to talk about some of the aspects of this TPA and what it deals with.

I'd like to introduce our panelists. First we have Trisha Matson. Trisha is a senior manager with Deloitte Consulting LLP based in Hartford. She has been in the consulting business for about 11 years, nine of that with Arthur Andersen and two with Deloitte. Her recent experience includes quite a bit of consulting around SOP with both audit and non-audit clients. Rob Frasca, our second panelist, is a senior consulting actuary with Ernst & Young in Boston. He specializes in financial reporting matters and transaction support. Prior to joining E&Y in 1999, he worked in a number of financial and management roles at insurance companies.

We're going to cover broadly four categories in the course of the session today. The first topic will be dealing with some of the SOP issues as they relate to annuity contracts, GMDBs and the like. Second, we'll talk about some of the issues surrounding sales inducements. Third, we'll turn over to the life contracts. Lastly, we'll spend some time talking about the new American Academy of Actuaries practice note and what's in that. Rob is going to cover the first two areas, and Trisha will cover the second two. In each of these sections we'll try to cover some background, although it will be fairly limited, but also give you some numerical examples and deal with some of the practical issues.

MR. ROBERT G. FRASCA: I'll be speaking mainly on annuity topics, particularly liability for guaranteed minimum death benefits (GMDBs). I want to talk a little bit about annuitization guarantees, as well what the SOP says about them. I'll talk some about sales inducements with respect to both annuities and life contracts. I'll also throw in some other issues as we go along the way.

First in terms of background, I'll discuss liabilities for GMDBs. The SOP gives us the means by which to set up liabilities for GMDBs under variable annuity (VA) contracts now. There really was no means to do that under GAAP previously. It basically defines a two-step process for calculating these liabilities. The first step in the process is to determine whether or not you have an insurance contract or an investment contract. That's a very important distinction and an important determination to make right up front. If you have an insurance contract, then you calculate a liability for GMDB. You'll calculate one for the life of the contract, whereas if you have an investment contract you don't calculate a liability for GMDB. The determination is made once for the life of the contract either at the inception of the contract or at the transition date when you adopt the SOP. That distinction will live with the contract for its lifetime.

In terms of whether or not you have an insurance or investment contract, there's a presumption within the SOP that if you have a benefit that is closely related to movements in market conditions, then you do have an insurance contract. You have a benefit that's going to require you to call these contracts insurance contracts. But, if you can prove that that benefit, in fact, is very much de minimis, then you may be able to call it an investment contract. The way you would prove that it is a de minimis benefit is by looking at something that is called the benefit ratio. The benefit ratio is just the value at issue of your expected benefits to be paid under the benefit, divided by the present value of your projected assessment. By assessments, we mean all revenue sources under the contract. It includes things like the mortality and expense (M&E) charges, your surrender charges on policy fees and, if you have revenue sharing arrangements with your investment sub-advisors, that will be included in the assessments as well. Both the numerator and the denominator of that calculation ought to be calculated using a range of scenarios. The SOP highly suggests that you should be using stochastic methods to do that calculation.

You calculate this benefit ratio and if it turns out to be a very small number, such as less than 5 percent, then you may be able to make a claim that you have an investment contract instead of an insurance contract. But to be honest, in terms of guarantees that you typically see under VA contracts, anything more valuable than a return-of-premium is generally being called an insurance contract and that's even with the return of premium. The majority of the companies that I've seen have been calling those insurance contracts as well, with the minority calling them investment contracts. That, in my mind, is the dividing line.

Once you've made the determination that you have an insurance contract, the question is: How do you set up the liability? The SOP defines the method. The method is a retrospective deposit method, which is very similar to what you do for deferred acquisition cost (DAC) under FAS-97 contracts. You take the valuation data and go back to the issue date of the contract. You project from issue the benefits and assessments under that contract. You include both the actual benefits and the actual assessments that have happened since the issue of the contract up to the valuation date and then prospectively you use your best estimate assumptions to project how the benefits and the assessments will unfold going forward.

Again, that future projection is done on the range of scenarios. It is highly suggested that you use stochastic methods. You calculate the liability by taking the benefit ratio, the result of those projections, and accumulating the benefit ratio time to assessments that have been made in the past and subtracting from that the accumulated value of the benefits that have been paid in the past. That's your liability.

In terms of the assumptions that you use, there should be consistency with your DAC assumptions. I'll talk a little bit later about what consistency means, but formulaically that is the calculation that has to be made.

Let me give you an example. Let's say that we have an annuity contract. We're going to assume that the growth rate that's used for estimated gross profits (EGPs) is an 8 percent growth rate. We're going to a single-cell example here. By single cell I mean we're using just one issue year's worth of business and a maximum-anniversary-value type of death benefit, which is a death benefit that is kind of consistent throughout that cell. Hypothetically we've run 500 stochastically generated scenarios, and we end up with a stream of projected benefits and a stream of projected assessments. For this purpose you can think of that benefit stream as being the average of the benefit stream over the entire 500 scenarios, and the same thing can be assumed for the assessments.

At issue in Chart 1, we take the present value of the projected benefit stream, the present value of the projected assessments and we come up with a ratio. In this example we have 0.174. I am assuming that as time goes on and the experience unfolds, your estimation at issue is exactly correct. You actually end up paying \$50 in benefits in the first year, \$200 in benefits in the second year, etc. Your

assessments are coming in at \$2,139 in the first year, etc. In that situation your benefit ratio doesn't really change. As you build your reserve, as the accumulated value of the assessments minus the accumulated value of the benefits, you would see the stream of liabilities as listed at the bottom of this exhibit.

That's the simple example that your actual projections are realized. Chart 2 has a little bit of a different example. Let's say you still have the same assumptions and the same projection at issue. As time goes on, experience is much better than you would expect it. For sake of argument, let's say that your benefit is zero. You continue to project that you're going to have benefits in the future at each point along the way, but magically each point along the way you end up with zero benefits. What would happen? The assessments are the same as in the prior example, but the benefit ratio as you recalculate it at each point in time in the future starts to come down. The reason it comes down is because you've been substituting the zeroes for the benefits paid in the past for the positive dollar amount that you had expected originally. Over time, the benefit ratio is going to come down and you're going to be recalculating the liability using that revised benefit ratio at each step in the process.

The interesting thing I find about this example is that the GMDB liability actually ends up building up to be a higher number than it did in the prior example. That's because you don't have that subtraction of the benefits already paid in the equation to give you a liability.

Backing up to the prior example, let's see what the effect is on EGPs from the GMDB. In Chart 3 I have pre-GMDB EGPs on the first line. You have to adjust them for the GMDB, and the first thing you do is subtract the benefits actually paid. To that you would also subtract and build up the liability, but you still need an additional adjustment. That adjustment is for interest on the assets backing liability. You've gone through and established a GMDB liability. What you need to bring into your gross profit stream is the earnings on the assets backing net liability, which I think is consistent with the FAS-97 approach of making sure that your assets equal the liability each step along the way.

This adjustment is a little bit controversial because it's really not mentioned in the SOP, but I think from a theoretical standpoint it's justified. You really should be making this adjustment. You just have the pieces together and you get the EGPs at the bottom.

I have a couple of other comments around developing the liability. The first is in relation to consistency with DAC assumptions. The SOP says that the assumptions you use for building the liability have to be consistent with the DAC assumptions. And where the liability is built on a range of scenarios, the question is: What does consistency mean? In my mind, what it means is that in the average of the scenarios that you're using, you probably should have the return being consistent with the return or equal to the return that you're using for your DAC models. If you

have some sort of a mean reversion mechanism built into your long-term return assumptions within your DAC models, and you want to somehow build that in to your long-term assumption within your GMDB calculation as well, you probably want to make sure that you can convince yourself there is consistency there.

The second issue is aggregation. I don't know whether this is unique in GAAP or not. Every time I say it's unique somebody comes up with a counter-example, but I'll say that it is unique in GAAP and that this is a liability that you calculate on a grouped basis. You cannot calculate this on an individual policy basis, so the question becomes: How do you aggregate? At what level of aggregation do you do the calculations? This had been somewhat controversial within the industry, but the TPA that we just released addresses this issue. It basically says that you should be aggregating at your DAC model level as a starting point, so if you're aggregating issue years for DAC and product type of DAC, that's probably where you should start to do these calculations. But you may consider even drilling down a level below that. For example, if for DAC purposes you're aggregating together your maximum anniversary value death benefits with your return of premium death benefits, you may want to consider splitting the two out and doing the calculation separately for those two subsets of the issue year.

Now I'm going to talk a little more about the benefit ratio. In everything that I've said so far, I've assumed that the benefit ratio is a ratio of averages. That means that when you have the 500 scenarios, you would take in the numerator, the average of the benefits over those 500 scenarios, and divide it by the average of the assessments in the denominator. However, there is a question as to just taking the benefit ratio for each of those scenarios and then taking the average of those 500 benefit ratios. This is an issue I've never really been able to get that worked up over, but there are some people that feel very strongly about it. I think that the preponderance of opinion seems to be in taking the ratio of the averages.

Finally, I'm going to talk about a few reinsurance considerations. The TPAs address reinsurance as well. If you exceeded your GMDB exposure, then what I would suggest as a reasonable thing to do is to calculate two benefit ratios. The first would be a benefit ratio on a gross basis, which is the normal benefit ratio assuming you didn't have reinsurance. The second would be the calculated benefit ratio on a net basis. On a net basis what I would suggest is that for the numerator you take your direct benefits, subtract from that your reinsurance premium and then add back the reinsurance recoveries from the reinsurer. That would be your net benefit ratio. Then you can build your gross liability using your gross ratio, and you can build your net liability using that net ratio. The difference would just be your reinsurance offset. To me it's a reasonable way to approach it and there may be other ways as well.

From the reinsurer's point of view, the SOP is fairly explicit as to what you do there. You really only have one revenue source if you're a reinsurer. You have the reinsurance premiums. There's really a very likely scenario where you could end up with benefit ratios in excess of 100 percent, particularly if you are a reinsurer.

There's nothing inherently wrong with that from the SOP's point of view. You could have benefit ratios in excess of 100 percent on particular cells of business. Where you run into a problem is if you have benefit ratios in excess of 100 percent for all your business because that's basically telling you that you have a premium deficiency, and it's likely you'll have to establish additional reserves under a FAS-60 type of loss recognition concept.

I have one other comment around the GMDB and implications related to purchase GAAP considerations. If you're going out and buying a block of business that has a substantial GMDB exposure to it, for purchase GAAP (PGAAP) you typically establish the fair value of that liability on your opening balance sheet. The question becomes: How do you go from that fair value that you've established at the point of purchase at the PGAAP date to the SOP liability? Typically speaking, the SOP liability is the smaller number because of the assumptions that are used and because of the way the liability is built. So, you may very well find yourself at day one with a very large liability under fair value and trying to transition to a much lower liability over time. In this situation I would suggest you alter your benefit ratio to take into account the fair value liability that you establish at the point of acquisition. The way I suggest doing that is to take the benefits and subtract that liability you've established and then divide that quantity by the assessments. Then what you do rolling forward is you start with that fair value liability and apply this new benefit ratio and bring that liability down over time.

Also, this approach works well if you just so happen to be the company that had established a liability for GMDB under some sort of loss recognition concept previously. This might be a way to transition into that away from that liability as well.

That's it for GMDB. I'd like to move now onto annuitization benefits. Previously under GAAP there was no provision to allow you to establish a liability for valuable annuitization options prior to people actually electing your annuitization benefit. The SOP is kind of a late addition to the SOP that gives you a way to now establish the liability prior to annuitization. This is going to have the most impact in the United States for companies that write guaranteed minimum income benefits (GMIBs) and also for two-tiered annuities. It's a very large issue overseas as well, in particular in the U.K. and in Europe where we have these guaranteed annuitization options that can be very, valuable. In fact, I think a lot of companies that had those are really welcoming the SOP because it gives them a way to prefund for those types of liabilities that previously under GAAP they were precluded from doing.

Another point to make is that again the TPAs clarified an issue that was of some controversy and that is whether or not establish an annuitization liability for contracts other than FAS-97 type contracts. It said that yes, in fact, you do, that this piece of the SOP applies to all types of contracts, such as FAS-60, 97, 120 or any kind that you might be able to imagine.

Mechanics for establishing the liability for annuitization benefits are really identical to what I just described for GMDB. The only difference really is that instead of interpreting the benefits in the numerator or the benefit ratio as being the death benefits, now the benefit is defined as the difference between the account value at the point of annuitization and the present value of the annuitization benefits at that point. It's the amount of loss you expect when people annuitize. In developing this liability you also are going to be using your best estimate assumptions around annuitization and election of annuitization. You're going to do a range of scenarios, and you build the liability against assessments and subtract for benefits paid just as you would for GMDB.

The example in Chart 4 looks an awful lot like the example I had from GMDB. That's purposeful because the mechanics are identical. If you substituted the words excess payments here for benefits paid, you're going to get the exact same numbers. It's important to reiterate that the benefits paid in this context are the difference between the account value at that point of annuitization and the present value of the annuity benefits at that point.

I have a couple of comments with respect to the annuitization liability after someone elects to annuitize. I'd suggest that you are establishing a best-estimate-at-gross-premium type of liability. There are no pads or anything within the liability when somebody elects to annuitize. The reason is because you really don't want to have any gain or loss at issue of the annuity when someone elects to annuitize. Before election of annuitization, you built up a liability. That was the annuitization liability. It was equal to the account value plus the difference between the present value of the annuity stream in the account value. The only way you're not going to get a disconnect when someone elects to annuitize is if you value that annuitization benefit using those same best estimate assumptions. I'd suggest that parallel here is to funding of a premium deficiency. What you've really done is to establish this liability before the election of annuitization. You recognized that you're going to have a premium deficiency. You're going to have loss recognition on that contract, so you've been building up a liability to avoid it. Similar to loss recognition types of concepts, once you get to that point, you're going to just value the things in your best estimate assumptions with no pads.

With respect to annuitization guarantees and the liability, I think the most troubling issue probably is the relationship between reinsurance and the liability on direct contracts for these types of guarantees. Typically speaking, you should get reinsurance on a GMIB. That reinsurance contract is settled in cash and therefore is valued as a derivative under FAS-133. The problem here is that now you have a means for establishing a liability under the direct contract, which is defined within the SOP and is very different from a fair value valuation you get under 133. You have this disconnect. You could be completely reinsuring your GMIB benefits, but because you're accounting for the liability on the direct contract under one accounting mechanism and you're accounting for the value of the asset, the reinsurance contract, using an entirely different mechanism, you get balance sheet

and income statement volatility even though you don't have any risks on your books. It's a very undesirable outcome of the SOP, but one that the people have to live with.

Now I'm going to move over to sales inducements, and this piece of the talk applies equally to annuities and to life insurance. The SOP provides the means to accrue a liability for sales inducements. Sales inducements are defined as front-end bonuses, such as bonus interest, or subsidized dollar-cost-averaging-type programs on VAs and persistency bonuses. Persistency bonuses are probably where the mechanics are the haziest. In terms of liability that you would accrue for sales inducements, the SOP says that you should build a liability over the period that the contract has to be in force for the policyholder to benefit from the sales inducement. It doesn't actually tell you how to do that, but it does tell you that you should not take into account anticipated lapses in building that liability. Within that constraint, I think you have some latitude in terms of how you would build the liability.

Once you've set up a liability, or a sales inducement, the SOP also gives you a mechanism by which you can set up an offsetting sales inducement asset. It gives you a number of criteria under which you can set up the asset. First of all, you have to have a liability established. You can't set up the asset unless you get the liability. Second of all, the sales inducement has to be defined within the contract. Third, it has to be incremental. It has to be incremental relative to other similar contracts without the sales inducement. This piece of the language has caused a lot of consternation amongst people. A lot of people have a bonus product where they give a 2 percent bonus up front, but don't have a non-bonus product. They want to know if they can set up an asset to offset the bonus. The answer to that is yes, you can set up the asset. The SOP should be pretty liberally read in this context so that you can compare that first-year bonus relative to subsequent years under the same type of contract. For example, if you're crediting 6 percent in the first year of a contract because of the bonus, but you're only crediting 4 percent in subsequent years for the same types of contracts, then you compare that six to the four and that gives you the mechanism by which you can pass this criterion for establishing an offsetting asset.

Then finally, the ongoing crediting rate has to be lower after inducements to qualify for deferral as an asset. Now, you set up the asset and you amortize it just like you'd amortize DAC, so again gross profits if it's a FAS-97 type contract. It looks like DAC, smells like DAC, a lot of people have DAC established for these things already but it's not DAC, it's something different. It's called a sales inducement asset from now on and has to be disclosed separately on the financial statements as well.

Let's look at an example. Let's say we have a persistency bonus that pays 4 percent of the account value right at the end of the fourth policy year. Chart 5 is on the first day of the fifth policy year to make the math a little bit easier. We're going to use the same EGPs as for the prior examples and let's say that the bonus meets the

criteria for deferral. On a single policy, this is one way that you could build liability that I think would be reasonable. You have a policyholder, you're going to assume that that policyholder persists forever and this is how the account value would be built on that policy. I think I assumed an 8 percent growth rate here.

One reasonable way to build the liability is at the end of the first year let's say it is 1 percent of the account value; at the end of the second year it's 2 percent, 3 percent after three years, 4 percent after four years. That will give you liability amounts that are shown in the bottom line. This is for one policyholder and this is how you would build the liability for that policyholder.

Now let's take it a step further in Chart 6, which shows how the liability builds for a whole block of policies. It builds identically. You're just going to take the percentages and multiply them to the account values. The numbers are smaller here because as policyholders lapse, you release the liability for those lapsing policyholders. That's really the only difference between this chart and the one prior to it. Again, the persistency bonus is just paid out at the beginning of year five and you can see how the account value bumps up at that point.

You can see that both examples have the same liability amount. Now I want to decompose it into how you can think of it as being built. The reason I'm doing this is because I'm going to use these lines to build the offsetting sales inducement asset. One way you can think of this is that you have an incremental amount. This is sort of the pure amount on persisting policyholders that you're going to set aside each period to fund the liability. This is a liability that grows with interest so let's credit it with interest. Then let's take out of that the lapses and the deductions for M&E charges, other reductions to the account value in order to build to the liability that you would get for a block of policies. This is just decomposing how that liability builds for a block of policies.

So, when you establish this sales-inducement asset, what do you build it off? What is it that you're really deferring? I would suggest to you that the SOP isn't really clear on this and that there are a number of ways you can interpret it. One might be that you build the asset by just taking those incremental amounts. Another might be that you take those incremental amounts and you subtract out the lapses and the deductions and that that net is what you set aside to build the asset. And the third point of view might be to take the entire difference in the liability and that that's the amount that you set aside and defer as an asset under the SOP.

Charts 7, 8 and 9 demonstrate the results under those three interpretations. In the first interpretation, an incremental amount, we're going to build the asset using just an amount. We have our EGPs and our accrual amount. You can see the accrual amount is just that incremental amount. The sales inducement liability is going to be consistent under all the methods. The sales inducement asset is just built as the present value of those accrual amounts divided by the present value of the EGPs, which gives you this K factor of .3969 that is used to build the sales inducement

asset. If you take the change in the sales inducement liability and the change in the sales inducement asset, you get the net impact to EGPs and to the earnings from the sales inducement. You see that the net impact is quite a bit of a smoothing of the persistency bonus over the life of the contract.

That's method one. Method two would be to defer the incremental amount minus the deductions for lapses. Going through the math on the next chart, you can see that the K factor is smaller in this example and that the net impact is a little bit more front-ended in terms of where the cost comes.

In terms of these two methods, I'll tell you the benefits and the drawbacks of both. The benefit of the first method is that those accrual amounts are always positive because all you're looking at is the additional liability that you're putting up on persisting policyholders. That has some intuitive appeal that you're only deferring positive increments.

With the second method, you could be deferring negative increments because if your lapses are high, then you're going to have negative change in your sales inducement liability. That's going to cause a negative deferral to the sales inducement asset. The benefit of the second method though is that the net impact to your income statement and the net impact to your EGPs are entirely insensitive to how you built the liability in the first place. Remember, there are a number of ways you could choose to build the liability for the sales inducement, but if you defer and amortize using the second method, you will end up with the exact same net impact to your earnings irrespective of how you decide to build that liability in the first place, which I think is a pretty interesting result. The second method is most in tune with the intent of the SOP because it really spreads the cost of the sales inducement most effectively over the EGPs. The establishment of the asset is really consistent with like what you would do for DAC so you would consider it there.

The final method would be to look at the total change in the liability to defer and amortize that. The net impact there is something in between the other two methods. This last method has the benefit of being pretty easy to explain and to describe. A lot of people, I think, literally reading the SOP would say that this is what you're supposed to do, but it does suffer from the drawback of the first method in that you'll have negative accruals potentially. It also suffers from the drawback of the first method in that it's not insensitive to the way that you've established the liability in the first place.

MS. PATRICIA E. MATSON: I'm going to touch on some of the issues that have arisen with respect to applying the SOP to life products. There's a pretty long list. I think a fair number of them have been addressed by the recently issued TPAs, so I will try to touch on that. I also will talk a little bit about the American Academy of Actuaries practice note. I was part of the committee that drafted that. We are going to give a quick overview of it, but as we go through the issues for life products if

there are specific things related to the practices that come up, I'll try to mention those as well.

Part of the reason that there are a lot of issues for life products stems from how life products were originally addressed in the SOP. I think the first draft of the SOP was very focused on VAs and VA GMDBs in particular. I think the life products were somewhat of an afterthought. There were a lot of comment letters that were received kind of asking for clarification on what you do for life products with the SOP. As a result, some specific language was added on life products in the SOP, but because it was added fairly late in the game and wasn't reexposed for comment, I think it's not entirely clear or wasn't entirely clear from the text of the SOP itself how exactly you were supposed to apply it to life products. Since then the FSP that Darryl mentioned has come out and that specifically addresses how the SOP interacts with under-reported revenue, although I will say I've been in a room of people talking about that document and still find that there are several different opinions on what that means, so I'm not sure that fully clarified the issue.

The TPAs now are addressing six additional issues. What I've seen generally is that a lot of companies have, I guess, procrastinated a little bit in adopting the SOP for life products just because they wanted to avoid the need to go back and do it all over again.

Now I want to talk about some of the big issues. One relates to doing the profit followed by loss test to figure out if you even need a reserve in the first place. The SOP says to look at your revenue and your benefit payments, and if you have profits followed by losses, you need a reserve. The question is: What is the revenue for this benefit feature? Is it just the charge that you're charging for that benefit feature or can you include other types of revenue? The TPA is now saying that in most cases it will be the explicit charge, so if you have a defined charge for that benefit feature, that's what you should use to do the profit-loss test. But if you can make a good argument that some of your other charges are intended to cover some of those losses and in your pricing you meant for more than just costs of insurance (COIs)—for example, COI charges to cover your death benefits—it's okay to include other charges. So that may give some relief for companies and you won't need a reserve if you include other charges in the test.

The TPA is also now saying that you shouldn't test your features together. So if you have a universal life (UL) contract where your base mortality is generating profits followed by losses and so is your secondary guarantee, you actually need to do a separate test for those two. If they both need a reserve, set up separate reserves for the two, but the test can be done in aggregate so that may be a little bit more work for some companies. For the level of aggregation, I think the general guidance is the DAC. Cohort level is what makes sense, with maybe some exceptions.

Does the SOP apply to normal benefits, meaning the baseline mortality benefit in the contract? It looks like the TPA guidance is saying yes, if you have for some

reason a COI pattern that results in profits following the losses, you probably do need a reserve for that base mortality benefit. It's not just intended to apply to things like secondary guarantees.

Doing this test you need to look at gross or net of reinsurance. What probably makes sense is looking at it for both. You're going to need a reserve for both anyway, but there may be circumstances where on that basis you clearly don't need a reserve so that may be sufficient.

We're going to go through a lot of the numerical examples that touch on some of these issues and exactly what different interpretations can do to your results. On the unearned revenue reserve (URR) issue, I think initially there was some debate as to whether the SOP was meant to replace URR. Now that you have this SOP, does that mean you shouldn't use unearned revenue to address something like a front-end load in your COI scale? This is where I think the SOP still doesn't give entirely clear guidance. It looks as though the URR can stay intact depending on the facts and circumstances. I think some people are viewing that to say that if the facts and circumstances are such I have profits followed by losses, then I need to take down my URR. I think that one is just going to be left up to judgment. I don't think we're going to get further guidance there.

In terms of calculating the reserve, there are a lot of questions about exactly how the mechanics work based on what's described in the SOP. In particular for non-variable account products, do you need to do something stochastic? As far as I know, almost no one out there is doing that. So I don't think doing any kind of stochastic interest rate is a requirement. When you have a range of scenarios, what do you do? Do you take a conditional tail expectation (CTE)? Do you take the mean? Do you use a mean of the benefit ratio or a benefit ratio of the means? There are a lot of different ways to interpret the language of the SOP.

One big issue that's come up is that the SOP is now requiring that, for your inforce block, you go back and do this calculation from issue. For a lot of companies the information just isn't there. You didn't necessarily capture your secondary guarantee benefits by DAC cohort, so it can make it very hard to practically implement a calculation at the DAC cohort level. A lot of companies are doing some sort of allocation. I've seen some in which they basically are just for history because they don't have the DAC just doing the calculation for the whole block of inforce together. It can definitely be very tricky getting your valuation systems to do stochastic scenarios. It's not such an easy thing to apply in reality.

I guess it's yet to be seen how these calculations are going to be unlocked. There has been a lot of work this year on actually doing the first round of calculations, but once this thing is in place, what do you do from there? Companies already are dealing with how to unlock DAC and how to minimize volatility. Should you be using a mean reversion approach or something else? This benefit ratio has a moving numerator and denominator, which makes it worse than DAC in terms of volatility.

So I think companies are going to need to come up with some creative approaches on how to do unlocking so that it's not making your income statement bounce all over the place.

We talked a little bit about level of aggregation, but an additional consideration there is the level at which you apply the zero floor. We're going to see an example that shows it can actually have a fairly significant impact on the results. Also, just the fact that you're not doing this on a seriatim basis, which I think most companies are not, is sort of inherently understating the benefits because you're going to naturally have within cohorts kind of an offsetting of positive benefits with negative benefits, so that can cause an understatement of your reserve. One proposed approach that is pretty consistent with the TPA that's just come out is to use some kind of cell grouping to do the projections, but to calculate the benefit ratio on the reserve at the DAC cohort level. That also makes it a lot easier to then reflect the change in liability in your EGPs.

What I've seen a lot on some of the nonvariable products is to use a few deterministic scenarios to try to get at the specific language of the SOP that says to use range. Another thing is that if you are doing something stochastic, this is an area that the analysts tend to like a lot. When we talk about volatilities and things, their eyes kind of light up, so you may want to consider that in your disclosures.

The requirement of the SOP is that your assumptions be consistent with your DAC, and what does that mean if you're using mean reversion? I think some companies using mean reversion are setting their mean return and their stochastic generator equal to the mean reversion rate during that period and then the long-term rate thereafter. Others are just using the long-term rate for the whole period.

Another issue if you're going to do stochastic analysis is how you map your funds to indices so that you can appropriately model them. I think a regression type analysis is the most common, but there may be other ways to do that. Using a single index is also a possibility.

The change to SOP tells you that the change in the reserve has to be included in EGPs. There are a few ways that you could do that. One would be to take the full hit of the change in the reserve in the year of adoption. Another possibility is to go back to each historical year and calculate what your reserve would have been in each historical year based on today's benefit ratio and then run that change in reserves through each historical year's EGPs. The last method, which I haven't seen used in practice at all, would be to go back and figure out what your benefit ratio would have been in each historical year based on what you had for history then and what you would have projected in the future. So the adjustment to your EGPs for the change in reserve would actually reflect a different benefit ratio for each historical year. That seems like a tremendous amount of work, but does seem consistent with the SOP. The first two would be equal if you don't have a zero floor

on your EGPs and if you're including interest on the reserve in the EGPs, which is, I guess, appealing.

The nice thing about this is you may have a big hit to your income because of the change in the reserve, but that's offset by the DAC popping up, typically, because of layering this change in reserve into the EGPs. The one place, I think, where that may not be true is if historically you didn't have anything in your EGPs to reflect your benefits costs. If you were also putting those into your future EGPs, that can sort of move you in the opposite direction. So the DAC impact of this has varied quite a bit depending on what companies were doing before the SOP.

The last thing that's tricky is related to the stochastic projection. You have a mean set of benefits and a mean set of assessments and presumably you were doing a deterministic DAC projection before, so you're going to have a disconnect between what you had as benefit payments and EGP components in your deterministic DAC versus what you now have as a mean in your stochastic projection. How do you make those two reconciled? I've seen a few different approaches taken. One that I think is fairly easy is rather than to try and layer all the pieces into your EGPs, to just use an incurred-benefits approach. So whatever your benefit ratio is, multiply it by your assessments to get your incurred benefits and you're done. That can be one easy way to do it, but there are several others. Some of these are actually described in the practice note.

Now I want to touch on some of the numerical examples. Some of the stuff sounds good until you actually try to do some calculations, which can be very painful. Not all pain is gain.

The first example (Chart 10) shows the possible interaction of the SOP reserve and the URR. One line kind of shows what your earnings emergence would look like if you had a front-end COI load. Basically what we're talking about in this example is some extra margin in your COIs in the first four years. That's pretty much it. Before you do anything that line shows that you have that extra margin coming through. Before the SOP you probably dealt with it using some URR, which is also represented by a line. It came close to eliminating that front-end margin. The COIs were amortized proportional to EGPs so it doesn't flatten them out, but it does address it somewhat. Alternatively using the SOP instead is also represented by a line, which looks fairly similar. The difference there is that in a sense you're sort of spreading your margin relative to assessments. Then lastly what you also could do is leave your URR up, but then include the URR amortization as part of your assessments when you do your SOP reserve. That is also represented by a line on the graph, which is fairly flat. Other than the first line, I think there's going to be some existence of all three of these practices going forward.

I don't think the SOP is crystal clear on what the right answer is among these three. It does talk a lot about using facts and circumstances, so I think it's going to depend on the specifics of the situation, what the product looks like, what you were

doing historically and also I think just as a caveat the way the emergence is going to look is certainly dependent on the nature of the product. So you may not have a situation that looks quite like this because the product is a little bit different.

Chart 11 shows an example of what results, depending on how you define assessment. The new TPA says you could use just the explicit charge. It also says if you can prove that it's reasonable, you can use more than just the explicit charge. So here, the top several lines are our baseline policy projection, so you have an account value that's growing with interest. You have your projected stream of death benefits and that's the mean of some range of scenarios that you've used. You have your COI charges. There is a load in that first year, but that doesn't really come into play in this example. You also have other assessments, so the line with the present value or 3,724 is your other assessments. If you use what I've called method one, meaning that you only used the COIs, the explicit charge in your definition of assessments, you do have profits followed by losses. So you'd end up having to set up a reserve. You can see that profit loss line under method one. Those last three years you have losses because your death benefits exceed your COIs. If instead you include all your assessments, you don't have losses in any years and therefore you wouldn't need a reserve. So those are the two different answers you could get depending on your interpretation.

Chart 12 shows an example of what happens depending on the level at which you aggregate your calculations. We have two cohorts here, both of which have a contract that provides a comparable death benefit stream, but they have different COI patterns as you can see. If you calculate at a benefit ratio in reserve for the first cohort alone, you get a benefit ratio of 26 percent. You can see how the reserve moves along. For the second calculation because you don't have profits followed by losses, you don't need a reserve for that cohort. So if you had two cohorts, and this would be two products because they have different scales of COIs, and you calculated the profit/loss test separately for each, you would end up holding a reserve. You'd hold a reserve for that first cohort and not the second, but if you combine them in that bottom line, you can see that the second cohort's profits offset the first cohort's losses. You end up with net no losses and you don't need a reserve in total. This is an example of where the aggregation can have a significant impact on the level of reserve that you're holding.

Chart 13 is the numerical example of the two different DAC methods that I talked about. You can see this top part of the calculation shows our baseline DAC analysis. You have in the middle line your EGPs, starting at 1,000 and moving along. You also have your DAC balance and your DAC amortization. Your K factor is about 68 percent. That's your typical DAC calculation. Below that is the GMDB reserve calculation. We have a benefit ratio there of about 9 percent and that just follows the mechanics that Rob went through already. The line below that shows the increase in reserve: 381, 426 and 474.

There are two ways that you can reflect the change in reserve in your EGPs. The first method, method one under the revised EGPs, shows taking the full hit in the year of adoption so that the full amount of the reserve in 2004 is 1,283. You run that through your EGPs in 2004 and your EGPs are only 1,150, so your EGPs would be floor at zero. Now, if you want to reflect this in a manner that would be consistent with actually going back through history, you would need to eliminate the zero floor and let the negative come through. But, this is an example of what would happen if you did apply your zero floor in your EGPs.

The second example is comparable except that you're actually putting that change in reserve through each historical year's EGPs and so you never hit the zero floor. You can see that because of the impact of the zero floor, there's a slight difference at the bottom of the page in what the DAC balance is at the end of 2004.

Chart 14 is one of our last examples on the impact of reinsurance. We didn't spend a lot of time on it, but with reinsurance under the SOP, you might think if you had something in which you were 90 percent reinsured that your reserve would be 10 percent of your direct reserve. However, because of the fact that you need to do something with your reinsurance costs, that's not necessarily true. Rob talked about one possible methodology of reflecting reinsurance costs in your SOP reserve rather than just calculating your SOP reserve using net claims. So you calculate your direct claims less your reinsurance recoveries, you could also include in there your reinsurance premiums. That's what we've done in this chart. By doing that, we don't have a 90 percent reduction in our reserve. We have something maybe more like 40 percent because we are paying for the reinsurance.

The TPA that's come out said that you don't have to necessarily address your reinsurance costs using the SOP. You could use some other method. You could amortize those over EGPs or some alternative. No matter what, though, you're going to have to have some kind of accrual for those unless they're directly proportional to your direct contract assessments.

Now I'm going to talk a little bit about current practice and some results from a poll that was done. Certainly some of this has probably changed. There's a pretty wide variation still on a lot of these issues.

I think the practice on the VA side is pretty consistent. The SOP was pretty straightforward there. On UL, of the sample of companies I've worked on this issue with, there's a very, very wide range. I think because of the TPA that is going to start to narrow, but at this point it is still very diverse. The level of aggregation of business for applying a profit/loss test and calculating reserve and how assessments are being defined varies. Also, whether the "base" mortality benefit even applies has been under question. I know some companies that up until now because the TPAs weren't issued yet, said this doesn't apply to their base contracts and that it's not what it's meant for. I think that argument is not going to be valid anymore.

Then there are variations in the extent of use of the range of scenarios also. I think varies pretty significantly.

Charts 15-17 are the graphs based on the poll I mentioned earlier. A question that was asked was: At what level of aggregation do you plan to apply the general floor? You can see at the back of the graph that the bulk were at either the benefit ratio cohort level, which I'm guessing would be fairly consistent with DAC in most cases, or the product level, which would depend on if there's issue. If they're not distinguishing by issue year, then that could be a higher level than DAC, so that may need to change.

Reflecting a range of scenarios, I want to meet the one or two companies that are going to use the stochastic within stochastic approach for this. But other than that, deterministic or stochastic seem to be the answer on these, and there was a mix of participants. You didn't know if folks were from VA writers or had VA backgrounds or UL or what it was so there's also a range for that reason.

Then when it came to using the results of multiple scenarios, a few are going to choose a single scenario. However, the bulk of them were either going to use the mean of their stochastic projections, their mean benefits and their mean assessments to calculate a benefit ratio or calculate a benefit ratio for every single scenario and use the average of those. I think that's probably less common than is even represented in this graph. I haven't seen many companies using that approach.

I am also going to touch on the practice note briefly. It was issued in the spring. You read the practice note and it leaves you with as many questions as before you read it because it doesn't really tell you what to do. However, they're not intended to and, in fact, they can't for legal reasons. The Academy needs to offer the range of practices we either see people using or we expect them to use. So it is a very wide range. Now, the plan is for this committee to reconvene now that these TPAs have come out and it's known a little bit better what the industry is going to do and refine the note to truly reflect industry practice after the final guidance. So right now I think it's probably broader than in reality is actually happening.

I think there will be a revised version of that coming out, I would guess, in 2005. But general life and annuity GAAP requirements; reserves for guaranteed benefits; reserves for annuitizations; reserves and assets for sales inducements; reinsurance issues; and transitional rules are just the various sections that are covered. It really does cover, I think, pretty much every issue that we've talked about and some additional ones, so it's an interesting read if you're grappling some of these issues.

FROM THE FLOOR: I have a question about what kind of benefit is specifically covered under this SOP. Is it just more related to like GMDB, GMIB or sales inducement? Or is it somewhat over a mortality-related benefit? Is it covered more in the FAS-133 instead of this SOP? Is that how it works?

MS. MATSON: We didn't mention it today, but the SOP does specifically say that if a benefit is valued under FAS-133 that you exclude it, so it would exclude anything under 133, but I guess outside of that it does apply to morbidity and mortality benefits generally. So it's not specifically GMIB or guaranteed minimum accumulation benefit (GMAB). It could be a base mortality benefit on a UL contract as well.

MR. DON SKOKAN: I have a question about GMIBs on a VA contract. Before the SOP, we calculated EGPs by looking at the net annuitization benefits, or any excess amount that was available to purchase the annuity benefit less the fund value that would be released upon that purchase. Does that change with the SOP? Prior to the SOP one of the items in the EGPs was a net annuitization benefit, or any excess amount that was available.

MR. FRASCA: It would change because now you're building over the life of the contract to fund that difference. The build-up to fund that difference would be coming through your gross profits, so you wouldn't have that cliff at the point of annuitization that would flow through the EGPs. It would be a smoother build-up.

MR. SKOKAN: And that comes about because of your reflecting the change in the liability of the GMIB?

MR. FRASCA: Yes.

MR. CARL J. NAUMAN: I'm new to this SOP and I'm trying to understand in my mind how it would apply to a UL product with a no-lapse guarantee. If you had such a product with like a 10-year no-lapse guarantee and assuming it's nonvariable, you'd have to come up with a series of scenarios and an average over the scenarios to get the liability. But, I would presume on the baseline scenario that the guarantee wouldn't kick in, so the benefits would be zero on the baseline. I guess you'd have to come up with scenarios in which the company's expenses went up and they raised expense charges or the mortality worsened or the interest could go down or something. So are people having to come up with a set of the scenarios in which, because they're equally weighted, they have to cover all the possibilities properly and to make sure that average comes out meaningfully?

MS. MATSON: What I've seen tested most often with UL is the interest. I think that's because it's the least controllable. So I would say that is important to test. In terms of other assumptions, I don't think there has been very significant testing of those other assumptions in practice. I think there's a fair amount of risk on those other assumptions. I think that they could have a wide variation. If that variation is not symmetrical, your average might not be the same as your best estimate. That means that it would be important to consider those as well. But, depending on how you set the benefit, if you test what you think is a reasonable range of all those things and you're still coming up with a negligible benefit, that may be what it is.

MR. NAUMAN: But even if you're only testing the interest and if you're going to equally rate them, I guess you have to make sure you cover the whole spectrum formally.

MS. MATSON: Yes, and I think you should test a pretty wide range of possible interest-rate scenarios.

MR. MICHAEL DUBOIS: With regards to the frequency of unlocking, I'm just curious as to what types of practices you've been seeing with respect to the variable benefits that we're looking at here. It would seem as if month-to-month, with changes in net amounts at risk, additional business put on the books, possibly mixes in some cases of ages, etc., that an annual unlocking might be way too infrequent and even quarterly may not properly capture it. I'm looking for the panel's comments on that issue, especially given the amount of work that appears to be involved in determining one of these benefit ratios.

MR. FRASCA: I guess the simple answer to that question is: Who knows? We're only a few months into this, but I think that, generally speaking, companies would be looking at how frequently they unlock the DAC assumptions or assess the DAC assumptions, which really should be any time that there's perceived to be a significant change in the expectation.

MS. MATSON: The one thing I might add is that because with the benefit ratio you have volatility in both the new rate and the denominator, it seems to me that there's potential for there to be even more volatility in this calculation than there is in DAC in which at least your deferred costs are not volatile. So I would think you're right that it seems like you need to be at least looking at this quarterly and it may be that you want to do it a little more often than DAC because of that reason.

MR. DUBOIS: Does it appear as if the SOP would allow for more in-depth calculations periodically with interim adjustments to reflect that type of thing?

MR. FRASCA: I don't think you find anything like that in the SOP per se. I think it's a general concept under GAAP that if you have something that's going to materially affect the financial statements and the presentation of the financial statements, then you have to consider it as frequently as the material change could happen.

MR. STEPHEN PRESTON: I have a question on VA GMIBs and GMDBs that are being hedged. Increasingly it seems that companies are hedging those benefits more to provide insulation from earnings volatility. Do you see any emerging practices or any guidance you might be able to provide on how companies are trying to deal with that given that the SOP does provide some smoothing in effect? Whereas on the derivative side, marking the derivatives to market would provide kind of an appropriate economic offset, but then because of the way the SOP is written, you might actually end up with a result, I guess, where you're out of sync

with the markets. Even though you're perfectly hedged or very well hedged, you're still going to get earnings volatility.

MR. FRASCA: I haven't seen anyone deal with that issue successfully to this point. I think there's a lot of recognition of that being a potential issue and people considering it within the context of the hedge programs, but I personally haven't seen anyone be able to really fully address or fully accommodate that problem.

MS. MATSON: I haven't seen anyone fully address it and I haven't seen anyone do this, but the one thing I've heard potentially discussed as a way to maybe minimize the disconnect somewhat would be to use more market-implied type assumptions in the SOP calculation. It's still a smoothing-type reserve, so certainly that's not going to fix it, but it could potentially make it move up and down a little bit more in tandem with the hedge portfolio. That's the only thing I've really heard.

MR. WAGNER: I'll add a comment on this one. I can think of at least one case where a client is instituting a hedging program on the GMIB and GMDB, and I think part of what they're seeing is that there's economic hedging and there's the hedging of the accounting treatment. Now that the SOP is in place and people are starting to sort out some of the basic questions, they're beginning to project forward. This gets into the stochastic within stochastic and you can project the volatility, but I think you do get a different answer. If you're trying to hedge the accounting, you get a different answer than if you're just trying to hedge the economics. You can develop some relationships. It may mean that you're only hedging a subset of the Greeks or something like that, but essentially I think as you start to project the effects of the SOP, you can do a regression, if you will, between hedging techniques and accounting impact versus economics.

MR. CRAIG KRONLUND: I have a question regarding the test for when you need to hold an SOP reserve for profits followed by losses. In particular, you presented a method in which you had COIs versus the benefits next to COIs and other charges versus benefits. I was wondering if you could discuss a little more what you have to do in order to demonstrate that that method was an appropriate way to look at it and also when that wouldn't be an appropriate way to look at it.

MS. MATSON: Again, this item is specifically addressed in the TPA that just came out and I don't have the exact language, but I'll try to paraphrase. I think the default is you use the explicit charge and the TPA says there may be instances where that's not appropriate because you didn't design the product that way. So I think if you had, for example, some pricing documentation that showed that your intent was for the COIs not to be covering the death benefits, but that the COIs plus the investment margin would, it would be appropriate to include investment margin. My example is probably oversimplified because I think it's rare that you're going to be able to argue that the total assessments cover the death benefits, because obviously you have expenses. I think one rule to follow is the assessments that

you're including shouldn't be resulting in you having losses elsewhere, for example, on your expenses.

MR. ERIC SCHUERING: I was wondering if you had any discussions with clients about the disconnect between the measurement of the SOP and its impact on DAC, loss recognition and DAC recoverability in total? The volatility that you may get with the SOP reserve running through your EGPs could trigger a loss recognition. Could that be deferred in the sense that DAC recoverability is still a single scenario type of test whereas the SOP has got the stochastic type of requirements in it? Have you had any discussions with any of your clients about that?

MR. FRASCA: I haven't specifically. I guess my opinion on the matter, though, would be that while the calculation of the GMDL liability is using stochastic methods, by the time you get it into your DAC model you kind of have a number. That's what you're going to be using to determine whether or not your DAC is recoverable from that point forward. You certainly would want to consider that in your thinking when you're establishing your stochastic scenarios and so forth, but once you get the number, I don't know how you can really argue that your DAC is recoverable if, in fact, it isn't.

MR. WAGNER: Could you talk about the idea of taking the stochastic scenarios and converting them into say a mean or some aggregate and comparing that with the DAC assumption? Let's say I take a mean as a true best estimate, but develop my return assumptions, the EGPs, with a little bit of conservatism. It may not be completely theoretically in sync with FAS-97, but may have happened practically anyway. How do you either get them in sync or deal with that issue?

MS. MATSON: I just want to make sure I understand the question. You're saying because of this you have a difference between your mean return assumption and your stochastic generator and your DAC deterministic assumption, but presumably pretty small?

MR. FRASCA: I guess you're admitting up front that you've kind of broken the rules of GAAP and you're saying that you're starting out with a mean assumption and a DAC model that has a little bit of a pad in it, but you chose not to use a pad in generating your stochastic scenarios?

MR. WAGNER: I think that's right and I'm thinking this is something that may have happened just because you probably didn't use stochastic methods to set that return in the first place. Maybe you didn't even do it intentionally, but just because you used a different methodology you got to a different number.

MR. FRASCA: The SOP says that you have to have consistency among your assumptions. Different people, I guess, could interpret the word consistency differently. It doesn't say that they have to be identical and by definition, I guess, they can't be identical since one is a range and the other is just a point estimate.

But you have to get comfortable with the term consistency and that you somehow are able to make the argument that they are consistent. For the specific example, I don't know. If you have a small pad in one and not in the other, you may be able to make the argument and maybe not.

MS. MATSON: I don't agree with that. It's pretty small. I would say it's probably fine. I would call them consistent if they're not very different, but if it's way off, you probably need it to fix your DAC assumption anyway so that's a good opportunity, I guess.

MR. WAGNER: I have another question. One of the TPAs says you should look at the different benefits in a contract separately. If you have base mortality and a no-lapse guarantee, you may have questions. If I have, say, a GMDB in which there's a return of premium option but I could also add onto that a ratchet feature or something like that, does that mean I need to test those separately? Do I need to look at the return premium by itself and the ratchet add-on by itself?

MR. FRASCA: Are you asking if you have the option to at some point in the future add that?

MR. WAGNER: Yes, you have it in the contract.

MR. FRASCA: My opinion is you wouldn't split those out. You have a GMDB and whatever that total GMDB happens to be at that point is what I would use. If you have a return of premium and then a maximum anniversary value in the same contract, I would just aggregate those together.

MS. MATSON: I guess the language of the TPA says something along the lines of if there's a separate electable benefit, it would be a separate benefit feature. So I think technically, the SOP would say you should treat them separately and do a separate profit/loss test and separate reserves. However, it seems to me that the reserves you're going to get for the add-on additional benefit is just going to be the excess death benefit over that return of premium anyway. So if one had no profit/loss and the other one did, it seems like they're basically additive, so you could probably make the argument that it's the same thing to do the calculation in total.

MR. WAGNER: If the TPA changes something I've been doing, will I be able to do a cumulative catch-up? How can I reflect that change? Will I have a mulligan, if you will, for the effect of this?

MS. MATSON: I'm not sure I know the answer, but I think you can include it in the cumulative effect. I think you go back to January 1 and you don't have to actually restate anything. You sort of pretend that you adopted it January 1 and then as of the financial date that you adopted it, you would reflect it as if it were there all

along. Going forward when you compare quarters to last year's quarter, you would include it as if it were there all along. Did I get it right?

MR. WAGNER: I think that's right. The accountants know the real answer, so I'm sure we'll find out soon.

MR. FRASCA: The FSP is a cumulative effect adjustment to third quarter.

MR. WAGNER: Yes, and that one is as of the beginning of the third quarter, or assuming it's adopted then. On the surface it sounds like they're different because this one is going back. If you are interested in seeing the TPA, I believe it is posted on the AICPA Web site (www.aicpa.org). There is a short paragraph that refers to APB 20 Accounting Changes, which I'm sure we're all very familiar with. I've already sent a note to a couple of accountants to have them explain what that means, but we'll see. I think the important thing is there is some transition here, so if there's a change it can be handled cumulatively.

Chart 1

Example – GMDB Liability (Assuming projections are realized)

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Benefits	50	200	250	400	600	500	450	300	250
Assess-ments	2,139	2,109	2,024	1,992	1,958	1,924	1,434	1,373	1,316
Benefit Ratio	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.174	N/A
GMDB Liability	322	508	640	625	403	262	77	20	0

Chart 2

Example – GMDB Liability (Benefits are less than expected)

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Projected Benefits	50	200	250	400	600	500	450	300	250
Actual Benefits	0	0	0	0	0	0	0	0	0
Assess-ments	2,139	2,109	2,024	1,992	1,958	1,924	1,434	1,373	1,316
Benefit Ratio	0.170	0.156	0.139	0.114	0.078	0.050	0.027	0.012	N/A
GMDB Liability	364	683	928	1,033	907	716	440	221	0

Chart 3

Example – GMDB Liability Adjusting the EGPs

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Pre-GMDB EGPs	1,983	1,952	1,865	1,830	1,795	1,759	1,311	1,256	1,203
Benefits Paid	50	200	250	400	600	500	450	300	250
Change in Liability	322	186	132	(15)	(222)	(141)	(185)	(57)	(20)
Interest on Assets Backing Liabilities	9	23	32	35	28	18	9	3	1
EGPs	1,620	1,589	1,515	1,480	1,445	1,418	1,055	1,016	973

Chart 4

Example – Annuitization Liability (Assuming projections are realized)

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
Excess Payments	50	200	250	400	600	500	450	300	250
Assess-ments	2,139	2,109	2,024	1,992	1,958	1,924	1,434	1,373	1,316
Benefit Ratio	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.174	N/A
Annuitiz'n Liability	322	508	640	625	403	262	77	20	0

Chart 5

Example – Sales Inducement Liability

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Account Value	101,118	102,248	103,392	104,548	109,945
Liability Percent	1%	2%	3%	4%	-
Liability Amount	1,011	2,045	3,102	4,182	-

The persistency bonus is added to the account value in the first day of year 5.

Chart 6

Example – Sales Inducement Liability

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Incremental Amount	1,080	1,092	1,104	1,117	-
Interest	-	81	164	248	-
Lapse/ Deductions	69	139	211	285	-
Liability	1,011	2,045	3,102	4,182	-

Chart 7

Example – Sales Inducement Asset Method 1

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
EGPs (adj. for bonus)	1,620	1,588	1,514	1,481	1,555	1,478	1,104	1,062	997
Accrual Amount	1,080	1,092	1,104	1,117	0	0	0	0	0
Inducement Liability	1,011	2,045	3,102	4,182	0	0	0	0	0
Inducement Asset	437	925	1,484	2,102	1,611	1,121	750	373	0
Net Impact	(574)	(546)	(498)	(462)	(382)	(431)	(322)	(329)	(350)

k -factor = .3969

Chart 8

Example – Sales Inducement Asset Method 2

Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>
EGPs (adj. for bonus)	1,620	1,588	1,514	1,481	1,555	1,478	1,104	1,062	997
Accrual Amount	1,011	953	893	832	0	0	0	0	0
Inducement Liability	1,011	2,045	3,102	4,182	0	0	0	0	0
Inducement Asset	468	917	1,358	1,775	1,360	946	633	315	0
Net Impact	(543)	(585)	(616)	(663)	(305)	(355)	(264)	(271)	(292)

k -factor = .3352

Chart 9

Example – Sales Inducement Asset Method 3

Year	1	2	3	4	5	6	7	8	9
EGPs (adj. for bonus)	1,620	1,588	1,514	1,481	1,555	1,478	1,104	1,062	997
Accrual Amount	1,011	1,034	1,057	1,080	0	0	0	0	0
Inducement Liability	1,011	2,045	3,102	4,182	0	0	0	0	0
Inducement Asset	399	858	1,394	1,999	1,532	1,066	713	355	0
Net Impact	(612)	(576)	(520)	(475)	(358)	(407)	(304)	(311)	(332)

k -factor = .3775

Chart 10

Numerical Examples

Potential interaction of SOP with URR

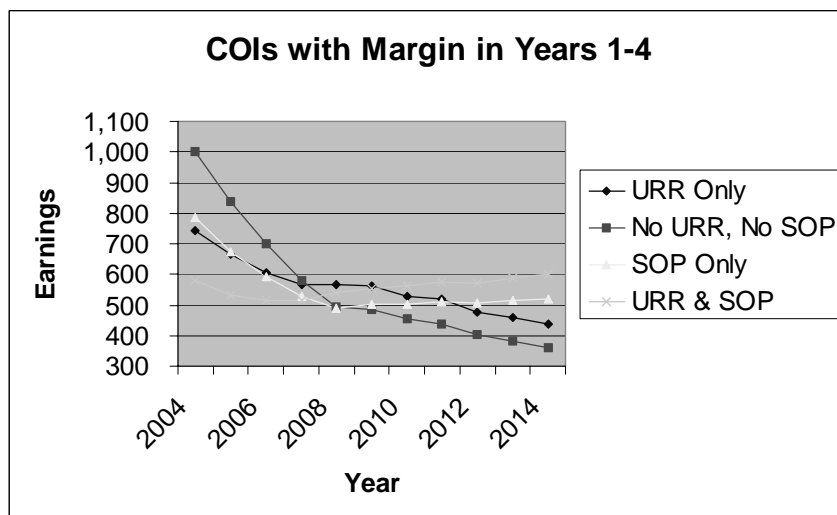


Chart 11

Numerical Example

Definition of Assessment

Mean Projected Amounts								
	PV	2004	2005	2006	2007	2008	2009	2010
Account Value EOP		100,000	105,000	109,500	114,325	124,333	134,895	167,000
Death Benefits	1,718	176	206	254	314	370	426	730
COIs	2,828	1,376	511	444	377	305	247	211
COI Load	463	500	-	-	-	-	-	-
Other Assessments	3,724	600	630	657	686	746	809	1,002
Total Assessments	6,552	1,976	1,141	1,101	1,063	1,051	1,057	1,213
Discount Factor (8%)		0.92593	0.85734	0.79383	0.73503	0.68058	0.63017	0.58349
Profit/(Loss) Method 1		1,200	305	190	63	(65)	(179)	(519)
Profit/(Loss) Method 2		1,800	935	847	749	681	631	483
Benefit Ratio (BR):	26.22%							
Reserve Method 1		342	463	535	542	491	381	-
Reserve Method 2		0	0	0	0	0	0	0



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Chart 12

Numerical Examples

Aggregation example

Mean Projected Amounts - Cohort 1								
	PV	2004	2005	2006	2007	2008	2009	2010
Death Benefits	1,718	176	206	254	314	370	426	730
COIs	2,828	1,376	511	444	377	305	247	211
Other Assessments	3,724	600	630	657	686	746	809	1,002
Total Assessments	6,552	1,976	1,141	1,101	1,063	1,051	1,057	1,213
Profit/(Loss)		1,200	305	190	63	(65)	(179)	(519)
Benefit Ratio (BR):	26.22%							
Reserve		342	463	535	542	491	381	-
Mean Projected Amounts - Cohort 2								
	PV	2004	2005	2006	2007	2008	2009	2010
Death Benefits	1,718	176	206	254	314	370	426	730
COIs	3,093	317	371	457	565	666	767	1,314
Other Assessments	2,607	420	441	460	480	522	567	701
Total Assessments	5,699	737	812	917	1,045	1,188	1,333	2,015
Profit/(Loss)		141	165	203	251	296	341	584
Benefit Ratio (BR):	0.00%							
Reserve		-	-	-	-	-	-	-
Mean Projected Amounts - Total								
	PV	2004	2005	2006	2007	2008	2009	2010
Death Benefits	3,436	352	412	508	628	740	852	1,460
COIs	5,921	1,693	882	901	942	971	1,014	1,525
Other Assessments	6,331	1,020	1,071	1,117	1,166	1,268	1,376	1,703
Total Assessments	12,252	2,713	1,953	2,018	2,108	2,239	2,390	3,229
Profit/(Loss)		1,341	470	393	314	231	162	65
Benefit Ratio (BR):	0.00%							
Reserve		-	-	-	-	-	-	-

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Chart 13

Numerical Examples

DAC impact example - first two methods

DAC		History				Future					
	PV	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Account Value EOP		100,000	104,760	109,747	114,971	120,443	126,176	132,182	138,474	145,065	151,971
Deferrals BOP	5,000		5,000	-	-	-	-	-	-	-	-
EGPs	7,400		1,000	1,048	1,097	1,150	1,204	1,262	1,322	1,385	1,451
Amortization Ratio (k)	0.675650479										
DAC Balance EOP		5,000	4,724	4,394	4,005	3,548	3,018	2,407	1,707	908	-
DAC Amortization			676	708	742	777	814	853	893	936	980
GMDB Reserve											
	PV	2,000	2001	2002	2003	2004	2005	2006	2007	2008	2009
GMDB Benefits	2,712		-	-	-	525	605	715	802	918	1,000
Assessments	30,747		4,000	4,147	4,300	4,458	4,622	4,792	4,969	5,151	5,341
Benefit Ratio	8.82%										
GMDB Reserve		-	381	807	1,281	1,283	1,221	1,060	817	455	-
Increase in Reserve			381	426	474	2	(62)	(161)	(244)	(362)	(455)
Revised EGPs											
Method 1	0.68833299		1,000	1,048	1,097	-	1,266	1,422	1,566	1,747	1,905
Method 2	0.71294479		619	622	623	1,147	1,266	1,422	1,566	1,747	1,905
Revised DAC Balance											
Method 1		5,000	4,712	4,368	3,961	4,278	3,749	3,070	2,238	1,214	-
Method 2		5,000	4,959	4,912	4,861	4,431	3,883	3,179	2,318	1,258	-

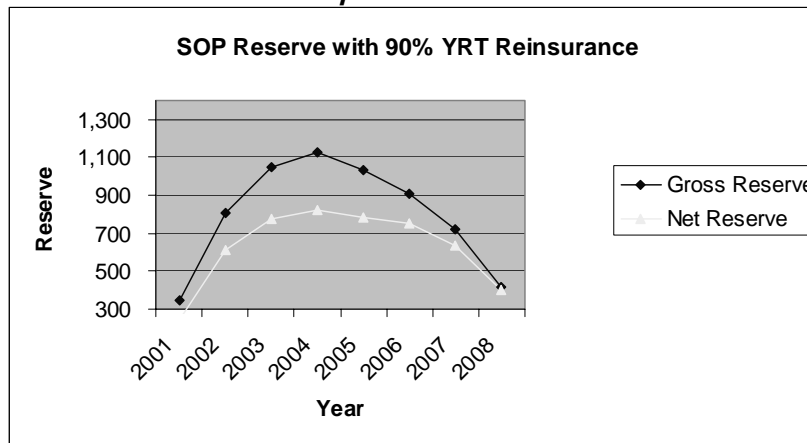


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Chart 14

Numerical Examples

Reinsurance example

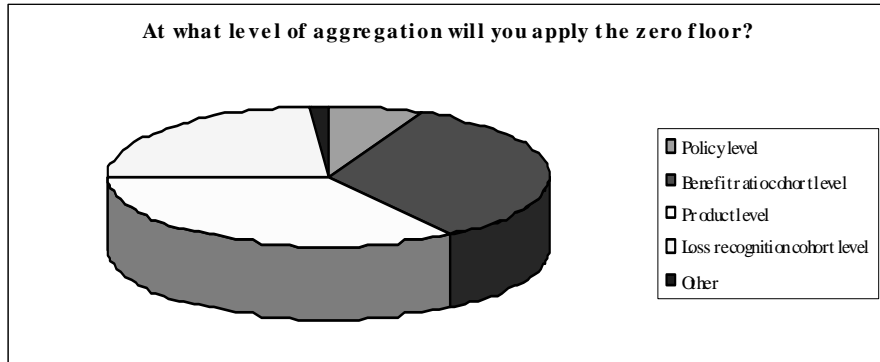


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Chart 15

Current Industry Practice – SOP 03-1

Survey of Practice - SOA Webcast



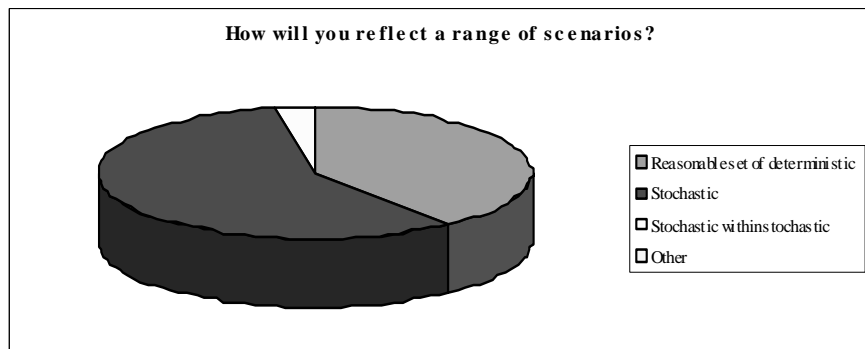
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Chart 16

Current Industry Practice – SOP 03-1

Survey of Practice – SOA Webcast



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Chart 17

Current Industry Practice – SOP 03-1

Survey of Practice – SOA Webcast

