

# RECORD, Volume 24, No. 1\*

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Maui I Spring Meeting  
June 15–17, 1998

## Session 73PD

### Fair Value of Insurance Liabilities

**Track:** Financial Reporting/Investment  
**Key words:** Finance, Financial Reporting, Investments

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*Summary: Insurance contract liabilities are determined under generally accepted accounting principles in accordance with various Statements issued by the Financial Accounting Standards Board, namely Statements 60, 91, 97, 113, and 120. These Statements define a book-value approach in which the liabilities are relatively insensitive to market conditions. At the same time, many insurance company assets are held at market value, in accordance with FASB Statement 115, "Accounting for Certain Investments in Debt and Equity Securities."*

**Mr. S. Michael McLaughlin:** I'm a partner with Ernst and Young in the Chicago office, and I'm the moderator of this session. This session will cover four aspects of fair valuation of liabilities. First, objectives of financial measurement; second, perspectives on *Financial Accounting Standard (FAS) No. 115*, the current generally accepted accounting principles (GAAP) state-of-the-art on fair value; third, implications of various methods; and, fourth, a brief update on status.

We're going to assume that you have a working knowledge of the various proposed methods for fair valuation of liabilities. We won't repeat those methods, and we won't spend much time discussing fair value of assets except for a brief mention of derivatives.

Our first panelist is Mike Beeson. Mike is a principal with Tillinghast-Towers Perrin in Atlanta. He has been there 14 years. Some of his areas of responsibility include asset/liability modeling and financial reporting. He was also on the team that developed Tillinghast actuarial software. Steve Mahan is a principal with KPMG Peat Marwick in their Dallas office, and he works extensively with financial

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reporting issues. Dave Ricci is corporate and appointed actuary with Life Reassurance Corporation in Stanford. His duties include cash-flow testing, dynamic surplus matters, and risk management responsibilities. We will proceed through the four presentations, and we hope to have time at the end for a few questions. With that I'll turn it over to our first panelist, Mike Beeson.

**Mr. Michael L. Beeson:** I'm going to examine the need for fair value of liabilities by considering some of the objectives of financial statement measurement. I'll go through some of the criteria that can be used in determining fair value of liabilities.

The first objective of financial statement measurement for life insurance companies is statutory solvency. From the perspective of policyholders and state regulators, the most important question is, will the company actually be able to pay its claims? The focus is on the balance sheet. Reserves are calculated using intentionally conservative assumptions. There's no need for fair value here. The idea is just to make sure that policyholders are going to be safely taken care of.

The problem with statutory accounting comes with the income statement because of the conservative nature of the reserving and, also, other conservative aspects such as immediate expensing of acquisition expenses instead of matching them against revenues. We often have a situation where you recognize accounting losses in the year of issue, and a company that's otherwise showing profitable business or strong new business growth has an income statement that shows losses.

GAAP accounting is designed to meet the needs of investors and analysts. It gives a truer presentation of income by following the concepts of matching expenses against revenues. It does this by deferring acquisition costs, initially matching against the premiums. We also enhance comparability between companies because we can now focus simply on the profitability and not the timing of the sales of business.

We still have problems with GAAP accounting though, in that it's based on historic costs. There are actually some good aspects of historic costs that can lead to a stable development of earnings and a stable divergence of surplus under a stable interest rate environment. The problem is with volatile interest rates. When interest rates change significantly, we can see opportunities for manipulation of income when companies realize capital gains early and have that go through income right away. On the other hand, in the case where they have significant capital losses, those can remain unreported for a long time by simply holding the assets at cost.

We could say that another objective of financial statement measuring might just be avoiding this manipulation. The interest maintenance reserve is intended to address

this at least from a historic cost point of view. When the company sells an asset before its maturity, any net capital gains are amortized against the remaining lifetime of the asset, which ensures that the cash flows that were intended to support the liabilities are actually still there or are at least not recognized in income until later on. However, even with this problem, we still don't present a true picture of economic surplus or economic value, and this is where the need for market value in both assets and liabilities first comes into play.

Let's return to the case where we had volatile interest rates. A shift in interest rates will cause asset market values to change. It will also change the discounted present value of the liability cash flows. In the case where assets and liabilities are mismatched, we can have a substantial change in the economic value of the company and that won't be reported in either statutory or GAAP accounting.

*Financial Accounting Standard (FAS) No. 115* goes part of the way to addressing this problem in that it holds some assets at market value, but not all. On the other hand, it doesn't hold liabilities' market value at all, and this actually leads to an inconsistency in the balance sheet. Steve is going to be talking about perspectives on *FAS No. 115*. But if we do want to achieve a true measurement of economic value, we need market value of assets and market value of liabilities. I said market value, but you usually use the term fair value, because there is no widely held secondary market for life insurance liabilities. There really is no market value. So fair value is really an analytical attempt to estimate the market value.

Another concept is entity-specific value. That's not necessarily the same thing as fair value. Fair value is an attempt to measure the market value that would be achieved in a transaction between a willing buyer and a willing seller. The entity-specific value is a value in use. It's the present value measure using the entity's own assumptions and the entity's own strategies. It's what it's worth to them. The reason I bring this up is because the recent Exposure Draft from the Financial Accounting Standards Board called, "Using Cash Flow Information in Accounting Measurement," deals with this concept and says that, in some circumstances, entity-specific value is appropriate. They don't say a whole lot more than that; it's left to the user to determine what those circumstances are.

As Mike said earlier, we're not going to go over specific methodologies for calculating fair value. That's not our purpose here. I am going to outline the two general methodologies of determining fair value. One is a constructive method. It works directly with the projected liability cash flows themselves, and it tends to calculate present value using the same concepts that we use in determining our market value for assets. The other method, the deductive approach, says that we can actually more readily measure the value of a company or a block of business.

Instead what we'll do is calculate an appraisal value and then deduct that appraisal value from the observable market value of assets to determine the market value of liabilities. These two methods are known as the option pricing method and the appraisal method.

What are the characteristics of the option pricing method? By returning to asset valuation concepts, we can use either an interest lattice or projected scenarios. Because liability cash flows are often path specific (in other words, the cash flow this period may be dependent on what has happened in the past), it's usually better to use projected scenarios rather than lattices. We need to use arbitrage-free scenarios. Again, that's a concept that we're familiar with from option pricing of assets. In order to make this calculation a model for policyholder behavior (to determine how they will exercise the options inherent in the contracts), we also need a model for the competitive environment.

The appraisal method, on the other hand, needs to project both asset and liability cash flows. It also considers federal income tax and required capital. Sometimes that's considered an advantage, and sometimes it is a disadvantage. That's predominantly the structure or the difference between the two methods. Do we project assets? Do we consider capital directly, and should we use arbitrage-free scenarios as we do in option pricing or realistic scenarios as we typically do for appraisals?

In trying to decide what method of calculating fair values is most appropriate, it is not just a question between those two general methodologies. You also need to analyze the specific approaches that have been proposed at various times. We need some criterion. Mike McLaughlin's paper is called, "The Index Discount Method for Fair Valuation of Liabilities," and he proposed the following five criteria. It must be: (1) independent of assets; (2) objective; (3) consistent with other actuarial methods; (4) applicable to a wide range of products; and, (5) easy to understand. I'll go over each one of these in a little bit more detail.

### **Independence of Assets**

The first question that one might ask is if we are going to try to calculate fair value of liabilities without considering the assets, does that mean that we can't use the appraisal method? I say, not necessarily. What it does mean is that we're not necessarily tied to the specific assets that the company has. This is a concept that we often use in appraisals where we recognize the fact that the company's specific assets can be liquidated and replaced with another set of assets that are more appropriate for the buyer in question. Given that we can potentially trade assets, should the value of liabilities actually be dependent on the assets that are currently on the book?

## Objectivity

The most subjective component of the fair value of liabilities calculation must be the discount rate. There are a wide variety of different approaches that have been proposed, and they range from Treasury yields to the company's earned rate to the cost of funds rate. Each of these may have a risk spread either added to or deducted from it. The calculations are very sensitive to the choice of discount rate. One point that I'll mention, and I'll actually go over this in more detail, is that to the extent we model some of the risks explicitly, we don't need to have all that much risk spread built into the discount rate. I'll go over that later.

The proposal in considering this criterion and saying that we want objectivity is that the discount rate should be based on some external index, like Treasury rates or Treasury rates plus something, but not directly tied to the company's assets. That conflicts with a number of the proposals that are already out there. You may have your own opinions.

It is clear that other assumptions like mortality, morbidity, and policyholder behavior are going to have to be dependent on the product and the market in which the product is sold. In order to calculate realistic values, we're going to have to have company-specific assumptions there. A case could be made for the economic environment interest rate scenarios. It might be desirable to have some kind of standardization on those assumptions.

## Consistency

The main point here is that the method we use to calculate fair value of liability should be consistent with other actuarial calculations, like appraisal values, option prices, or reserves. It shouldn't be anything new and off the wall. We'd also like to have consistency among companies. This goes back to the previous two issues—objectivity and the discount rate not depending on the company's particular assets. Consistency with asset valuation means that we should have consistent economic assumptions. We should start from the same yield curve, for example.

## Applicability

Whatever method we come up with for determining fair value of liabilities should apply for life insurance and annuity products as well as health products that the companies sell. Obviously, we have to consider the relevant contingencies for each product. What I think is interesting about this criterion is it argues against the current approach we have with applicability where we use *FAS No. 60* for traditional nonparticipating products, *FAS No. 97* for universal life, and *FAS No. 120* for mutual company participating products. This is saying we should have one method that we can apply consistently to everything.

## Simplicity

I wonder if we can settle for four out of five here. Actually, there are many methods that have been proposed that involve many complex questions, but what we mean by simplicity here is that it should be easily understandable and explainable to the intended users, who would be practicing actuaries. It doesn't have to be something you would hear or read about in *U.S.A. Today*, but something that actuaries could understand.

I want to spend a little bit of time on the issue of the appropriate discount rate and how to analyze that issue and how to choose a discount rate. When we calculate appraisal values, we have a risk-adjusted discount rate. The reason for the risk spread is that we're trying to make an allowance for the uncertainty of the projected cash flows, particularly the possibility of adverse deviation from projected cash flows. If we can take some of the risks involved and actually model them directly, then we don't need to have a risk spread built into the discount rate.

For example, if we're pricing a bond call option, and if we use stochastic scenarios, we can actually price the risk directly. We don't need to have an additional spread built into the Treasury rates. If we are doing an actuarial appraisal, we would need a much larger risk adjustment spread if the appraisal is just a single level interest scenario without consideration of cost of capital than if we use a stochastic simulation and include the cost of capital. Again, we've already modeled the volatility, we've already modeled some of the risk. Naturally, we would use a lower discount rate because we wouldn't have this risk spread built into the discount rate.

Another issue with regard to the discount rate is default risk. Given that there is a risk that the company may not pay off its obligations, how should that be factored into the calculation of fair value? If you look at it from the policyholder's perspective with other things being equal, the value to the policyholder of a contract issued by a low-rated company has got to be lower than the value of a contract issued by a top-rated company. On the other hand, we can suppose that the company was going to subcontract the obligation of the reinsurer. If they had to pay a reinsurer to assume the obligation, would the price they have to pay have anything to do with their own probability of default? I don't think the reinsurer is going to factor that into the calculation and that argues perhaps whether the fair value should reflect the default rate.

Finally, should the discount rate reflect asset yields for the company's own earned rate? We've already made an argument that we shouldn't even consider the company's assets. We should either consider a proxy for assets or an amount for the liabilities directly. The questions that you would have to ask is, if the company

pursues a more aggressive investment, thereby increasing their interest yield and increasing their probability of default, should that reduce the fair value of liabilities? If so, is it appropriate that the company trade assets and manipulate their income by reducing their liabilities or increasing the liabilities for that matter? As I mentioned before, the use of the company's earned rate would violate that independence criterion.

In summary, there are a number of different methods that have been proposed for calculating fair value of liabilities. I've outlined some of the criteria that might be used to consider those methods and evaluate them. I know most of you have your own perspectives. I know the panelists here have theirs. I hope to hear some of your opinions during the question and answer session.

**Mr. Steven H. Mahan:** I'm going to talk about some current perspectives on *FAS No. 115*. *FAS No. 115* is our current statement and it represents a partial step towards fair-value accounting. It has been five years now since *FAS No. 115* was set forth and I'm just going to spend a little time talking about its provisions. *FAS No. 115* is applicable to all debt securities and equities that have readily determinable fair values. There are three asset categories created by *FAS No. 115* and they are the basis for accounting for both the income statement and the balance sheet (Table 1). They are (i) hold to maturity, (ii) available for sale, and (iii) trading securities. With the exception of trading securities, these securities are still on an amortized cost basis for income statement purposes. The most dramatic change created by *FAS No. 115* was the use of fair value for balance sheet purposes for the available-for-sale category. That was the one change that has had the biggest impact on the industry.

TABLE 1  
SUMMARY OF PROVISIONS

Asset Clarification	Income Statement	Balance Sheet
Hold to Maturity	Amortized Cost	Amortized Cost
Available for Sale	Amortized Cost	Fair Value
Trading Securities	Fair Value	Fair Value

I'm going to talk about some perspectives of the different constituencies that might use *FAS No. 115*. These are notions that I have accumulated through conversations with either members of these constituencies or people who have dealt closely with them. My comments aren't meant to be comprehensive. To the extent that we have any of these people in the room and they have a view that modifies or is adversely

different from mine, we'd welcome them to come forth and give some of their viewpoints on how they've used and interpreted *FAS No. 115* to this point.

First is the regulators. We have to remember that *FAS No. 115*, unlike *FAS No. 60*, which is applicable only to insurance companies, is an all-industry document. Much of the impetus for *FAS No. 115* was created from the financial services industry. The background information of *FAS No. 115* states that regulators served as a big impetus for the eventual adoption of *FAS No. 115*; however, this came mostly from the banking side. On the banking side, the accounting that serves as the basis for statutory monitoring is based on GAAP. On the insurance side, state regulators have not really been involved or concerned because the accounting basis that regulators use is primarily statutory driven and not GAAP driven.

We need to keep in mind that under the current laws where we've introduced the valuation actuary's concept, the cash-flow testing requirements reflect considerations that liquidity, quality, matching of assets and liabilities, and, eventually, consideration of market value, get examined. It appears that *FAS No. 115* is not directly a concern of insurance regulators.

In the past, A.M. Best has not really looked at GAAP. That has changed over the last three to five years, and GAAP is now part of the metrics that they consider. This has come about because of a variety of reasons, including the increased use of a holding company's structures and acquisitions, the pace of acquisitions, and the fact that mutual companies are now subject to GAAP. A.M. Best has traditionally focused on operating results, excluding realized gains and losses. They have, traditionally, been less impressed with securities' prowess, whether realized or unrealized. With the industry moving more heavily into asset accumulation business, naturally, the investment component has become more important. Spread management issues tend to transform the information afforded by *FAS No. 115*. Finally, the risk-based capital type analysis done by A.M. Best is statutory based and, accordingly, does not appear to be impacted by *FAS No. 115*. Other rating agencies, such as Standard & Poor's or Moody's, would have a similar outlook.

Next, we have analysts. The focus of analysts appear to be on earnings and capital needs that might limit earnings potential. If you think back to the summary of the provisions of *FAS No. 115* in Table 1, especially the income statement portion of it, you know that most of the income statement is still on an amortized cost. Because only a small portion of the industry assets have been classified as trading securities, the earnings in the industry are still driven primarily by assets at amortized cost. This is, for the most part, unchanged by *FAS No. 115*. Any positive view of additional equity caused by unrealized gains would come at the expense of additions to equity in the future from a balance sheet perspective.

I also believe the analysts know that the real capital limitation in the industry is based primarily on statutory risk-based capital constraints. Considerations of unrealized gains in equity on GAAP basis would be discounted as a source of capital because analysts know that these gains could disappear. Unrealized losses would get a closer look for any accompanying disintermediation issues. One point about *FAS No. 115* from an analyst's point of view, is those companies that have assets that are actively managed and, accordingly, are classified as trading securities, should have no doubt that the analysts now have a better picture of the company's operations and earnings that would result. This would be one change created by *FAS No. 115*.

Most of the information afforded by *FAS No. 115* was already available before it was required in Standard of Practice (SOP) 90-11. This was set forth in November of 1990, so much of the information was already there. And the analysts have had an opportunity to consider that information or disregard it before *FAS No. 115* and now.

Investment bankers are another constituency who use GAAP information. Investment bankers, as you would probably guess, are very focused on mergers and acquisitions, and they're looking for sources of value and earnings impact. As a source of value, they might give some credit for unrealized gains, but it would be heavily discounted. Another thing to remember is under purchase accounting (and most transactions are under a purchase basis rather than pooling), if an investment banker is looking at the GAAP earnings after a transaction, there would be no initial impact on earnings because all the assets are marked-to-market as of the purchase date under purchase accounting anyway.

I work for KPMG. We're an auditing firm, and I'm involved in the audits of life insurance companies. What is the perspective of auditors? We tend to look at things in the context of what kind of audit issues it might create. *FAS No. 115* did simplify some gray areas, and it created some new complexities that I'll talk about.

Before *FAS No. 115* there was, as now, an issue of classifying assets by category. I'll use a term that is somewhat vague—the held-for-sale security versus a trading security. Before *FAS No. 115*, this classification was for the entire portfolio. It was all or nothing. The criterion to be used to determine which classification you would fall into was based on intent, and there was very little guidance in judging the appropriateness of these criteria. This often put the auditors in a difficult position when a company said that its assets were held for sale, but it was doing above average trading. Should they be classified as trading securities? The way that decision fell was so important because it had to do with the whole portfolio.

Under *FAS No. 115*, we now have the three asset categories that I showed in Table 1. The criteria is still based on intent, but the situation is better because it's not all or nothing. The portfolio can be segregated by type and there's better guidance in judging intent and behavior that would taint a classification. The accountants look at this as one area of improvement of *FAS No. 115*. It has helped do away with some of those ugly discussions on whether they really had a trading portfolio.

Much of the auditors' viewpoints and much of the implementation of 115 has tended to evolve into consideration of liability offsets, and this creates some new gray areas and inconsistent treatment. For large group pension contracts that have contract-contractual language saying that all the gains go to the policyholder, it's clear that any increase or decrease in policyholder liability should offset the unrealized gains or losses that would otherwise go to equity. In most cases though, the situations aren't as clear as that and it can create some gray audit areas. For example, the treatment of the typical single premium deferred annuity (SPDA) just varies widely in this regard.

There are some companies that I've dealt with that take the position that, for SPDAs, all the unrealized gains or losses in the assets backing the SPDAs belong to the policyholder and, accordingly, an increase in liability would be created to offset all the unrealized gains and losses. I had one client that went to the trouble of amending all its SPDA contract language to put in what I thought was some quite benign language to the effect that all its gains are going to the policyholder, even though it was a spread-based product. The idea was that this would help support the position that all unrealized gains are offset in their entirety by an increase in the liability to the policyholders. I've had other clients that say some portion of those gains belong to the policyholders. If they had a spread-based SPDA for which they were earning 10%, but crediting 8%, they might take 80% of the unrealized gains and offset those and say those belong to the policyholder. Only the remaining 20% would go to equity or be available for consideration for a shadow deferred acquisition cost (DAC). That's another position people have taken.

Quite frankly, most of my clients don't try to claim any of the unrealized gains or losses belonging to the policyholder. The participating nature and the degree of certainty through which unrealized gains and losses belong to the policyholder can vary, and different companies are taking different interpretations in that regard. The auditors are put in a position of dealing with these variety of proposed treatments and are being accused of taking a different position with one client than they do for another.

Finally, there are other shadow adjustments that created a lot of audit issues. Some of these have been clarified over time and some of them are still a little vague. I

think the development of a shadow DAC adjustment to show an increased or decreased DAC that would have resulted had those unrealized gains been realized, has become fairly well established, although the actual methods of making that calculation still probably vary somewhat.

Something that was a little slower to emerge was what we call a shadow loss recognition event. This occurs mostly on single premium annuity products in this new marked-to-market balance sheet environment. If, based on that new marked-to-market interest rate, the liabilities are deemed to be inadequate at that rate, you would have what we call a shadow loss recognition event, and this would create an increase in liability. There has been some guidance that has gradually emerged that validates that concept.

One more gray area is disabled life reserves. Unless you're really heavy into that area and the disability products, it may not be material to a company. If it is material, it creates the issue of whether there should be a shadow adjustment to disabled life reserves. In this new marked-to-market environment, if the discount rate on the disabled life reserves is now inadequate, maybe it ought to be revalued for balance sheet purposes only, and this would create an offset to any unrealized gains or losses that would otherwise go to equity. That's an issue that I've recently had to deal with, both domestically and in an international environment. Many of the implementation issues and the issues that auditors have to deal with have centered on offsets to the unrealized gains and losses on the liability side.

One last thing is in consideration of any of these offset issues, the first step is to allocate the unrealized gains and losses to a specific product. Many companies haven't done this. They may have done it for statutory purposes or they may be taking a slice of the entire pie, but some of the more sophisticated companies have very sophisticated asset allocation processes. But even in those most sophisticated companies, the allocation result is rarely what would be called for under *FAS No. 115*. To allocate the gains and losses to the products, the basis really ought to be on the GAAP net liability or, in the case of *FAS No. 97* products, it might be on the full account value because *FAS No. 97* calls for all the spreads to be driven off the account value. This raises a lot of issues as to how you allocate those assets. For *FAS No. 97* products, it actually creates the oddity in that if you allocate the assets to the full GAAP balance sheet, the DAC, in many cases, gets allocated to equity. That's an oddity for those of us who grew up thinking of the GAAP net liability backing a product rather than DAC somehow backing equity, but that often results.

Finally, what is the view of company management of *FAS No. 115*? In my experience, many concerns were raised initially, and they were very keen to this issue. They were concerned about the volatility of the equity. I, personally, never

fully appreciated the concern of that when it didn't impact earnings in most cases, but they were concerned about the volatility of equity. Even if it were balance sheet only, this provided more area where they could be compared to their peer companies and shown to be different. *FAS No. 115* created one more explanation area, and even if company managers weren't concerned, they knew they'd have to be explaining differences. It created a need for them to view themselves versus market trends. There was one more statistic or one more metric that they would have to explain and, in that regard, it was somewhat of a negative.

Even though the information had already been available in SOP 90-11, as I mentioned earlier, disclosures of this information in the balance sheet have received a closer look. It seemed initially to the companies that the best they could hope for from *FAS No. 115* was maybe that it would be a nonnegative. Except for some unusual circumstances, this would rarely be a positive thing for them. Very few companies that I talked to viewed it as a positive thing. The companies that I talked to were somewhat concerned about the possibility that *FAS No. 115* might be restrictive to them and not afford the flexibility in investing that they need. This is probably an issue for some companies that they deal with going forward.

The biggest concern from all the constituencies, but for some reason it tended to arise mostly from the companies themselves, is the classic concern of the inconsistency of fair valuing the assets with only limited adjustments to the liabilities. Companies tend to voice that more than any of the other constituencies.

I'd like to conclude with what I heard from the conversations that I've had around the industry. There are some exceptions, but most companies are concluding that it's a nonevent, and that it wasn't revolutionary. Much of the information was already available, and it did create more ammunition for industry comparisons, and implementation issues are still ongoing. There are still some gray areas of offsetting the unrealized gains with a variety of offsets, whether they be liability offsets or DAC offsets. Those areas are still out there and they create some inconsistency in treatment. Nobody in the industry really looks at the current *FAS No. 115* state of the world as being the ultimate approach. They all believe that's going to change. This is just one step towards ultimate total fair-value accounting.

**Mr. David A. Ricci:** I'm with Life Reassurance Corporation of America. I dove into this subject so I could show some implications on some selected product groups.

The objective is to apply fair market value principles to a selected group of products and then to take a look at the financial results under statutory GAAP and the *FAS No. 115* fair market value approach, using the fair market value liabilities in place of the reserve, or the net reserve in the case of GAAP. We will take a look at several

situations, and examine their effect on the emergence of profit and surplus. We'll also examine the financial statement volatility, particularly the balance sheet, and how much value this whole thing can add in terms of an additional management tool that can be provided to give management some indication of the kind of product characteristics that they are managing.

Mike McLaughlin gave the five characteristics of a good system—independent of the assets, subjective, consistent, broad applicability, and simple. You might sacrifice one for the other. I've tried to come up with a reasonable balance.

I'm starting off with the best estimate cash-flow projections. It could have been developed from seriatim valuation, Tillinghast or Chalke models, or whatever, but basically you have a fairly good best estimate of what you perceive as being the future cash flows on this business.

Then the premiums are discounted at the risk-free rate, plus what I call a put option rate. It is an addition, of course. The reason is, the more unlikely it is that you will get those premiums, the more you ought to be discounting them. The intrasensitive benefits are being discounted at the risk-free rate of return less a call option rate. In other words, if those benefits increase because of changes in the interest spread, there should be a deduction that would generate larger benefits. Other benefits are being assessed at the risk-free rate. Sometimes there's a credibility application, but we could serve this to be part of the pricing. It and the expenses are just basically at a risk-free rate. The fair market value is the lapse-sensitive benefits and the discounted expense, and lapse immune benefits less the premium.

The first case study involves a group of yearly renewable term products. These are basically products that were ceded to us clients in 1997. They're very competitive term products. They have a 100% first-year commission and competitive renewal commission scales. Much of the profitability is dependent upon assumptions concerning the renewal feature, so there's a lot of supposed premium value in the later years on this product. They're either renewable at five, 10, or 20 years, but you'll see a five-year pattern in most of this.

In Chart 1, the triangle line shows the fair market value. The diamond line is the statutory and the square line is the net GAAP. This is a graph of the projection of income starting in year one. As you can see, the statutory has substantial negative income because of strain. Both the GAAP and the fair market value are reasonably predictive and level. There are some notable differences though. One is that the early application of DAC and the amortization schedules may create a little more artificial reduction or change in the income value as time goes by and the fair

market value is flat. I think that's more because of my manipulation of the numbers than anything else.

Chart 2 shows the reserves. The top reserves are the statutory reserves. Notice how nicely they ratchet up and then fall off. These are the actual total reserves. You'd expect to fall off at the end of the renewal period. There are somewhat similar patterns in both the net GAAP and fair market value, although these are substantially negative in the first years. In essence, because of the assumptions involving the future renewability and the premiums and so on, there's a significant positive value that one would have to give to market value liabilities to take them literally. Then someone would have to come in and actually purchase the liabilities rather than you selling them or you giving them something for them.

There is a surplus which will show that all the surplus values go to zero at the end of the period, although the fair market value does develop a significant amount of surplus between durations 12 and 27.

The next study is on the interest-sensitive life product group. This is a group that was acquired at one point (the point that we start this out). It's a fairly well-seasoned group of universal life (UL). In this particular case study, I've assumed the risk-free rate of return and the others are 5%. I've also assumed that the put option rate is 40 basis points and the call option rate is 40 basis points. The premiums are discounted at 5.4%, and the benefits are discounted at 4.6%.

Chart 3 shows that the fair market value starts at the lowest level, although there's some crossover with the GAAP. Statutory is at significantly higher values. This is mainly because of the reserve accumulation up to the initial point.

In Chart 4, on reserves, statutory is on the top and the fair market value and net GAAP reserves are fairly close to each other and they converge at a fairly early point. As far as the surplus is concerned, most of it does not generate any positive numbers until very late in the cycle here.

Case study number three is based on the same interest-sensitive life products at a point when the rates pop up. I'm making the assumption that the rates will stay at the point at which they jump up, so all the renewal assumptions change accordingly. The risk-free rate of return is 8% instead of 5%. The put option rate is 100 basis points and so is the call option. The rate pop up in Chart 5 occurs between year one and year two, so you'll see some significant changes at that point.

The portfolio yield increases slowly throughout the period as higher yielding assets are added to the portfolio.

An additional 15% lapse in year one then grades to a cumulative 27.8% in year six. The base surrender rates are raised to 150% and decrease to 100% in year 27.

Pretax income for the second year decreases on a fair market basis to an extremely negative value. After that point, it's a gradually reducing number to the end of the period. The GAAP has an adjustment which definitely involves the release of DAC between years one and two, so you see a significant decline. It doesn't reach negative values until year 12. The statutory stays up in those levels and mostly does the same thing.

Chart 6 shows the first real example of a major difference in using fair market value accounting versus using GAAP. It seems that GAAP is working much more according to statutory principles at this point. Chart 6 shows the jump up of the reserves between year one and year two.

One of benefits of fair market value accounting is that we can directly link this to a best estimate. I shied away from using some average scenario approach, which may add a lot more believability, but probably reduces the simplicity by a factor of 10. Mike McLaughlin has a very good article about the status of fair market value in the March 1998 issue of *The Financial Reporter*. I suggest you read that along with the reference that Mike Beeson made in his presentation.

Another benefit is we can produce market values. We can quantify the difference between required surplus and the best estimate of surplus utilized by just taking a look at those surplus graphs that you're looking at. At this point, we don't have any; at least I didn't plan to have any deferred costs or amortization schedules in the fair market value approach.

Cash flows should link directly to pricing, which is not much different than GAAP except for the acquisition cost feature. Values are easily derived from cash-flow testing which may make this a positive. I'm not quite sure. It may also take something away from the correctability. Returns on equity for different products should be comparable.

One obstacle is that interest-sensitive volatility may create an overreaction, although I think we're way underreacting at this point to some of these interest-sensitive products that really are now showing the kind of sensitivity for either statutory or GAAP that they should show. I know that as valuation actuaries and appointed actuaries we try to emphasize this fact in our statements, but as long as it's not attached to an ongoing, approved methodology, it's going to be difficult. I would say this is an added value rather than an obstacle.

It's difficult to come up with an objective measurement. The discounting mechanism is difficult to obtain. I tried to go through an exercise, and if we have time later, I'll discuss the fair market value, selling the asset for that amount, and releasing reserves, and coming up with some kind of return to see if it came close to the actual internal rate of return of the fair market value. In the case of UL, if you use the interest-free rate of return, it's no problem, but in the case of term, which has very little asset value, it's very hard to come up with something that's close to that without increasing the discount rate. It might be more effective for balance sheets than income. It doesn't seem to have a lot of added value for products that are not interest-sensitive.

Another thought, which may run counter to what we're trying to present here is that almost all liabilities are held to maturity, so there's a different aspect to them than on the asset side of the balance sheet. If you're planning to sell a block of liabilities, then you get a rather close valuation of how much it's worth from your friendly consultants.

There is no market to test values as is the case for assets. It does not consider the value of relationships to clients, other productivity, or intangibles. It will demonstrate the capital intensity of insurance products of other financial vehicles which, in the long run, is a positive. In the short run, it may have political ramifications.

**Mr. McLaughlin:** I will now give a brief status update on developments at the FASB and internationally, with a few additional comments at the end.

FASB has at least three projects that are directly related to fair value of liabilities but they are at different stages of development. The statement on derivatives and hedging, which is clearly fair value related, was released as *Statement 133* in June 1998. I have not seen a copy of that, but I have been told that it contains no surprises relative to the Exposure Draft and the various other communications that FASB has put out. There's a Concept Statement that is expected to be released in the third quarter of this year. That has already been exposed and discussed and is now being finalized. There is going to be a specific project on fair value, and that's still in its very early stages.

The *FAS No. 133* is called "Accounting for Derivative and Similar Financial Instruments and for Hedging Activities." The details of that statement have been covered in another session at this meeting. I won't go through a lot of that detail, but it is relevant to our discussion of fair value of liabilities. It's clearly relevant to some products, like equity-indexed annuities or equity-indexed life insurance, more so than others. But it indicates that FASB's leaning toward a fair value basis for

balance sheet reporting to a greater and greater extent. The consequence is that the balance sheet determination will then drive the income statement, which takes a secondary role.

There is provision for two levels of income. There's net income in the income statement and comprehensive income, which is a measure of the change in equity on the balance sheet for items other than capital contributions and distributions. You might already be familiar with this by a different name, because *FAS No. 115* separates the income statement impact from the impact on equity, at least with regard to unrealized gains and losses on assets available for sale. There is the intent that the balance sheet should be at fair value.

Derivatives in the statement must be recognized in the financial statements. There cannot be off-balance-sheet stuff. A derivative may or may not be designated as a hedge. If it is designated as a hedge, it needs to meet certain criteria. There has to be an item to be hedged and that item needs to be exposed to some risk, whether interest rate risk, timing risk, or foreign currency risk. The hedge is designated to set against that asset or item, and the hedge reduces exposure and is correlated with the exposure of the underlying item. The point is that hedging is a way to insulate the income statement from risk, but both the item hedged and the hedge will actually be reported through income, typically, in this fair-value-type balance sheet.

The statement refers to certain insurance contracts (such as equity indexed) that contain embedded derivatives, and those embedded derivatives need to be bifurcated from the insurance or annuity portion in some consistent manner. There is not much guidance at this point, but different alternatives as to how to bifurcate the contract are provided in the statement. I guess the major point is that one should expect the balance sheet for liabilities to move more and more towards fair value.

The Present Value Concepts Statement is not called present value at all. It's called "Using Cash Flow Information in Accounting Measurement." A concepts statement is issued by FASB. It's not authoritative guidance, but it does indicate which way the wind is blowing, shall we say. The original version was released in June of 1997. It was discussed in January of 1998, and it has been subject to quite a bit of discussion. A group of actuaries, myself included, along with Arnold Dicke, Jim Grant, and Bob Reitano met with FASB last November to give the "actuarial perspective" on present value and use of cash-flow information in accounting measurement.

There was a separate meeting of the Committee on Property Liability Financial Reporting with FASB. The life actuaries and the property/casualty actuaries don't

necessarily see eye-to-eye on some of the fundamental issues here, and that's a bit of an obstacle in terms of reaching consensus on how fair value of liabilities should be determined for FASB and the public—is it life or personal auto.

Nonetheless, the concepts statement is good. It exposes and discusses different ways to measure value, whether historic value, book value, market value, appraisal value by experts, and last and lowest in the hierarchy of valuation methods until now has been present value of future cash flows. This concepts statement somewhat legitimizes and raises the importance of the value of a present-value-based measurement of an asset or liability.

The scope is unchanged in the Present Value Concepts Statement. The comments suggested that the concepts statement should be with recognition of liability. FASB would like to stick to measurement of liability. Examples were too lengthy and won't be included. The concepts statement has a couple of things that are quite significant. Both entity specific and fair value measures will be permitted concepts. Which concept should be used and when is not determined in any final way. Fair value is the amount at which an asset could be bought or sold in a current day transaction between willing parties. Entity specific reflects the cash flows expected by the entity (your insurance company, your book of business, and your cash flows) with the markets view of risk as opposed to your company's view of risk. This gets away from the issue of having a thinly capitalized company or an insolvent company being able to reflect the possibility of default in its obligations in measurement of the liability.

In the concept statement, they now talk about a specific discount rate. They say that the discount rate will be the risk-free rate. The concept of multiple cash-flow scenarios is introduced in the concept statement with probability-weighted averages being taken. This is a far step away from two ideas: the single best estimate idea and the adding of a margin to a risk-free rate in order to discount. Both of these changes reflect, to a large extent, the input that the actuaries have provided to FASB, so it has been quite interesting to see how that concept statement has evolved over time. It should be released in final form in the fall.

The Fair Value Project is in the early stages. The concept statement will sort of test the waters and solicit opinions from different constituencies. There's no specific timetable here for release of the deliverable from the Fair Value Project, whatever that deliverable is. It would be possible that a statement would be issued establishing the requirement for fair value for a wide range of assets. It might be wider, for example, than *FAS No. 115* and possibly include liabilities and perhaps insurance contracts. That's not known by anyone at this time, but FASB has shown a willingness to accept input from a wide range of sources. They are very good

about adhering to their due process rules. They're working with a similar international project with the idea of having some consensus in the future.

At this point I'd like to sort of pose a rhetorical question, why do we want to do fair value of liabilities at all? One of the major reasons that fair value of liabilities is appealing is because of international aspects. Because more and more industries are global, there's a tremendous number of cross-border transactions. I think there is clear agreement that varying accounting standards in different countries presents problems for both the companies and investors. There is also the need for more timely information. That's a second justification for fair value. A third is even within a single country, namely, the U.S., we have three, four, or five different methods for accounting for policy liabilities. *FAS No. 60*, *FAS No. 97*, *FAS No. 113*, *FAS No. 120* and *FAS No. 97* have developed over time. We don't even have a consensus within our own country; fair value is one direction in which financial measurement could move that would introduce greater consistency.

The International Accounting Standards Committee (IASC) is a body similar to FASB. It's staffed by accounting professionals, academics, and representatives of business. It is similar to FASB, with a similar due process, but it doesn't have quite as big a budget, and not quite as large a staff. It relies more on voluntary efforts and has several working task forces, including an actuarial task force. They are working on a very comprehensive project to set out standards that they hope will be acceptable worldwide. What seems likely to occur is that it will be acceptable worldwide, except in the U.S.A., at least at first.

But FASB has acknowledged the benefit of uniform accounting standards and would like to work and is working with the IASC. It is also working with accounting rule makers in various countries, and they have indicated that they would accept IASC standards where no FASB standards existed or where the IASC standards were superior. It has not indicated that they would accept IASC standards where they are judged by FASB to be inferior to our own U.S. standards. There's going to be lag before we see uniformity. Nonetheless, any step forward is a step in the right direction.

### **International versus FASB**

There are presently some differences in insurance treatment and different accounting statements that we have. The present IASC draft does not really deal with insurance contracts at all. I think that will change, but there has not been a lot of discussion at this point as to how to deal with insurance contracts.

There's no clear consensus on fair value methods. I think the best example of that is that property/casualty actuaries and the life actuaries take a different view as to how

to adjust for risk. Many life actuaries think that to adjust for risk, you take a risk-free rate and add a spread. If the risk-free rate is 8%, the risk-adjusted rate might be 10% or 12%. The property/casualty actuaries are concerned about reducing their loss reserves. One or two casualty actuaries at this session have the view that a risk-free rate is adjusted by reducing by a spread. If a risk-free rate were 8%, the rate to use to measure liabilities might be 6% or 5%, or some lower number. With such a divergence of opinion, you can see the difficulty of reaching a consensus. My paper talked about using a risk-free rate, partly as a compromise approach, but I think it is something that is theoretically sound in that the risks inherent in the future cash flows should be modeled specifically and not left with the difficulty of establishing a specific spread.

Companies have begun to look at other approaches to fair value. We talk about economic value added and embedded value as options. My only problem with that is that I don't think it really solves the problem. This is the direct method versus the indirect method, or constructive versus deductive method in Mike Beeson's terminology. You could go to valuing the company's equity directly by using an actuarial appraisal method. The only problem with that is you're still using a model. You're still using a series of projected cash flows and scenarios to determine a value. If you're going to be subject to the idiosyncrasies of a particular model, why not determine the liabilities directly?

There are a couple of stumbling blocks in fair value, but there could be profit at issue with fair value of liabilities. That's a mental hurdle that not everyone can get over. We can accept some possibility of loss at issue, but not profit, except with things like embedded value methods. In fact, embedded values are being examined internationally. If you can accept profit at issue with embedded value, I don't know why you couldn't with a fair value of liability. The volatility is an issue, but, again, if liabilities are volatile, it's only appropriate that they should be; that's what I call good volatility. If volatility matches the asset volatility, the income statement would be affected only to the extent of mismatch.

For more information, FASB has published a thick book on IASC versus U.S. GAAP. That's available upon request. The *Fair Value of Insurance Liabilities*, which was also a seminar held by the New York University School in December 1995, has been published, and there are several worthwhile papers to read. There's a Web site that FASB updates quite regularly, and it's a good source for the latest developments in this quite fast-moving field. *The Financial Reporter* will have articles from time to time. There also is Bob Reitano's paper, "Two Paradigms for Fair Valuation of Liabilities," which is in the current issue of the *North American Actuarial Journal*. These are all good sources of additional information.

**Mr. Sam Gutterman:** The International Actuarial Association has a committee examining fair value of insurance liabilities and insurance accounting in general. I am the chairperson of that committee. There are several representatives from North America and there's an active interface with the IASC and the international actuarial profession. If you want to follow that, some of it is included in the Institute of Actuaries (IAA) Web page under the Insurance Accounting Committee.

A project on discounting on an international level is beginning at the IASC, which is just going to be starting in another couple of months. This is a very active issue. There is, I think, a very aggressive time schedule which is scheduled for agreement by the year 2001. That may slip, but relative to the consensus that's currently available, that's an aggressive time schedule.

**Mr. Steven P. Miller:** I'm curious about the best estimate of cash-flow projections. Is that based on a mean, a median, or a mode? No matter what the answer is, it seems like somewhere along the line you had to have a probability distribution in order to come up with a best estimate.

**Mr. Ricci:** I think you can safely assume that the way it was done is by examination of scenarios and by appropriately weighting them to come up with a reasonably strong best estimate. In many cases, there may be difficulty involved, particularly if you have some kind of bipolar distribution. That makes it difficult and you might have to resort to other methods to come up with the nature of the liability.

**Mr. Donald J. Golightly:** I just want to get some clarification on *FAS No. 133* and treatment of derivatives and hedging. Are those values basically going to be similar to available-for-sale asset treatment under *FAS No. 115* where it's just the balance sheet that's really getting impacted and the income statement doesn't have that much of an impact?

**Mr. McLaughlin:** Of course, you'll need to read the statement, but I think not. I think the intent is to have that flow through the income statement for the hedged item and the hedge itself. They would flow through the income statement to the extent that you're well matched; then your income statement would be neutral or relatively neutral.

**Mr. Anthony J. Render:** I appreciate the comments on derivatives. As we've just heard, that's something new and I think it's helpful to know about that. My question concerns the Present Value Concepts Statement. I'm familiar with FASB statements coming out and that sort of thing, but I am not clear on the concepts statements, specifically what they are, who produces those, and what relevance they have for the future.

**Mr. McLaughlin:** The concepts statement is not authoritative. It does not prescribe accounting treatment, but it is a deliverable, if I could call it that, from a research project. FASB has board members. They also have an extensive staff. They appointed a staff member, Wayne Upton, as manager. He has worked for over a year to put together the concepts statement. It's a discussion paper, if you will, and they solicit input from all constituencies, users, and potential users of financial statements. They distill the comments and their own views and produce a document. It's a long document. It's not hard to read actually. It's richly illustrated and really gives insight into the way the board members and the staff are thinking. It's an important sort of weather vane. It's kind of a teaching tool as well. You learn a little bit about the way accountants define financial accounting measurements, which I think is valuable for all actuaries in financial reporting. It's an indicator of what may come.

**Mr. Beeson:** The U.K. Actuarial or Accounting Group has a similar document that comes to different conclusions. The Canadian Institute of Chartered Accountants has asked the CIA to develop a position on discounting. It's basically a delegated authority, which is an interesting contrast to the U.S. situation. And I think the IAA is also starting to work on such a document.

**Mr. McLaughlin:** You can see the difficulty of reaching consensus. Nonetheless, I think we'll get to a better answer than if we have each country coming up with two or three different methods. I'll make the comment that the status quo is really not so perfect in the United States because of *FAS No. 115*. Steve made the comment that it was largely a nonevent. I don't disagree with that, but I think that observation, to some extent, is product specific. There are products, for example, with very low levels of DAC, invested assets that are very large in relation to DAC, and unrealized gains and losses can be very large in relation to DAC. You then have the situation of assets fluctuating with interest rates, and the liabilities, even net of DAC, are not changing very much at all. I do think we have a bit of a schizophrenic situation in the balance sheet which we look forward to drawing to a close at some point.

CHART 1  
INCOME—97 TER

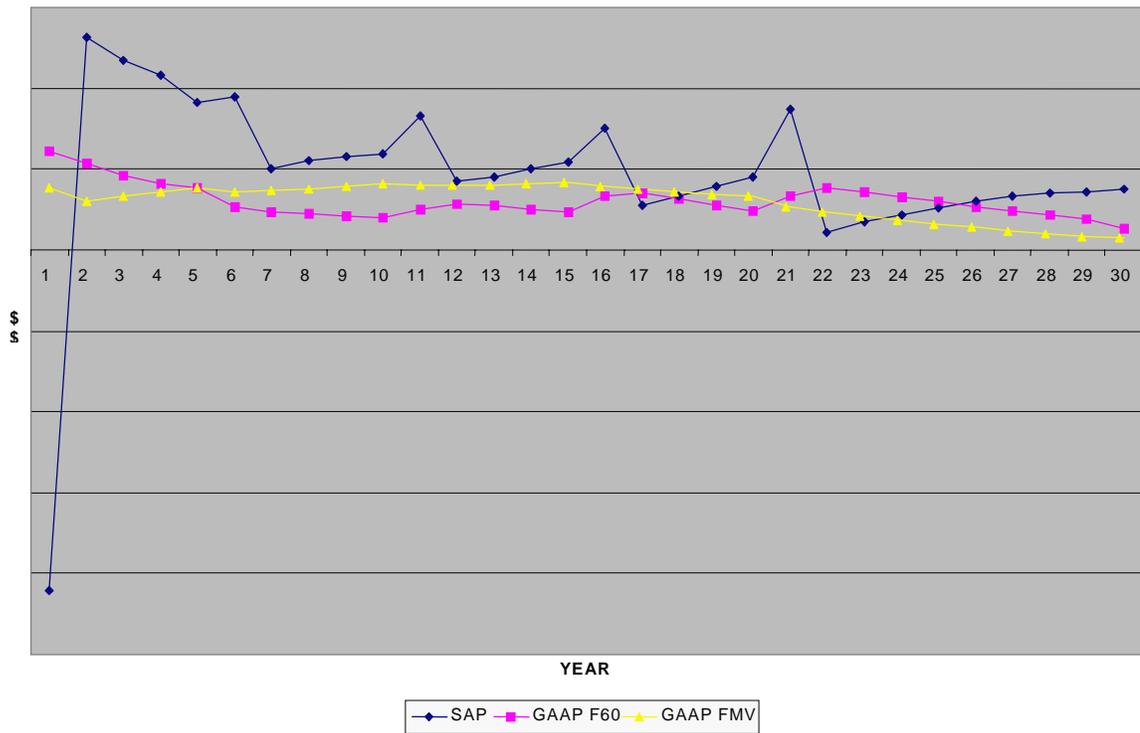


CHART 2  
RESERVES—97 TER

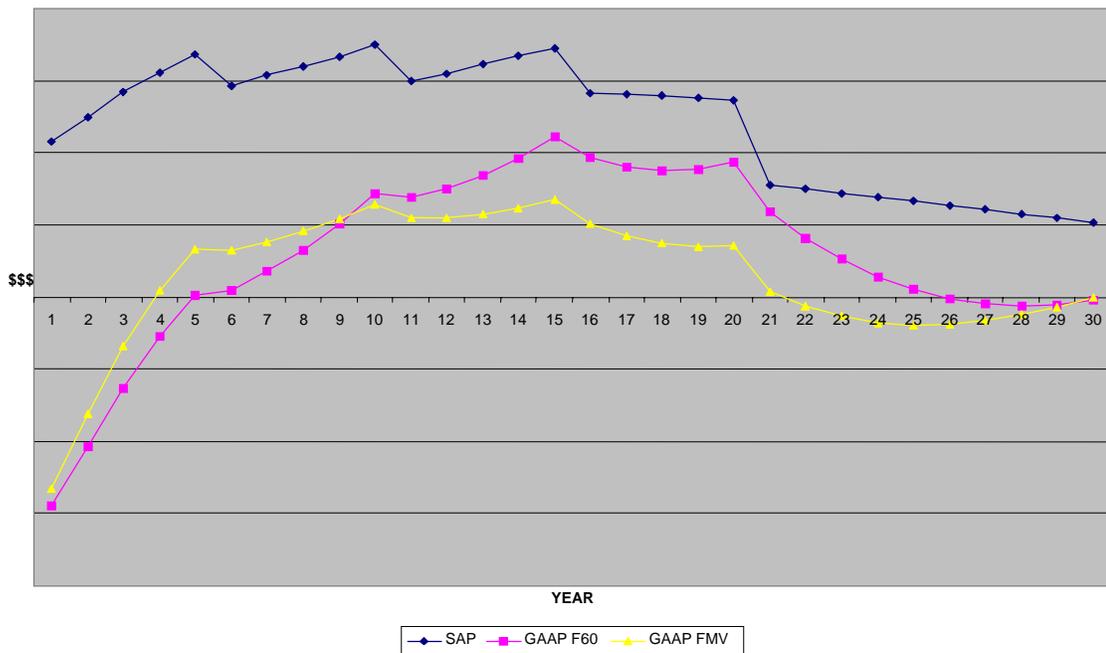


CHART 3  
PRE-TAX INCOME: UL BASE

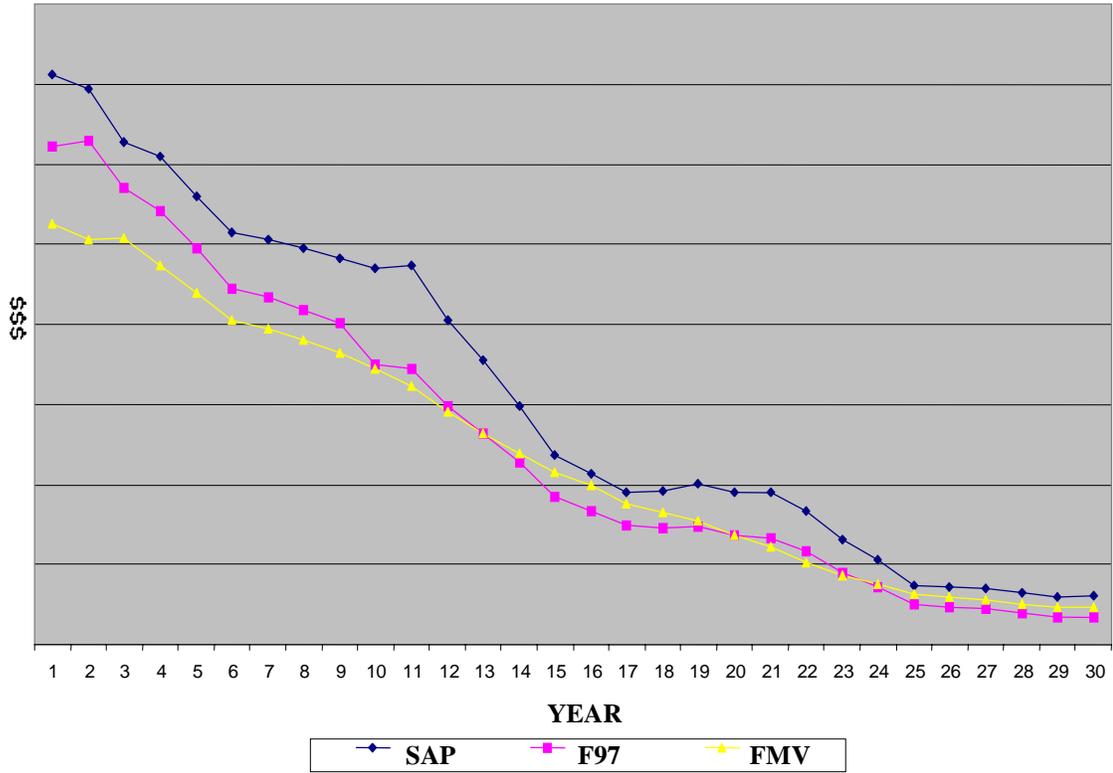


CHART 4  
RESERVES—UL BASE

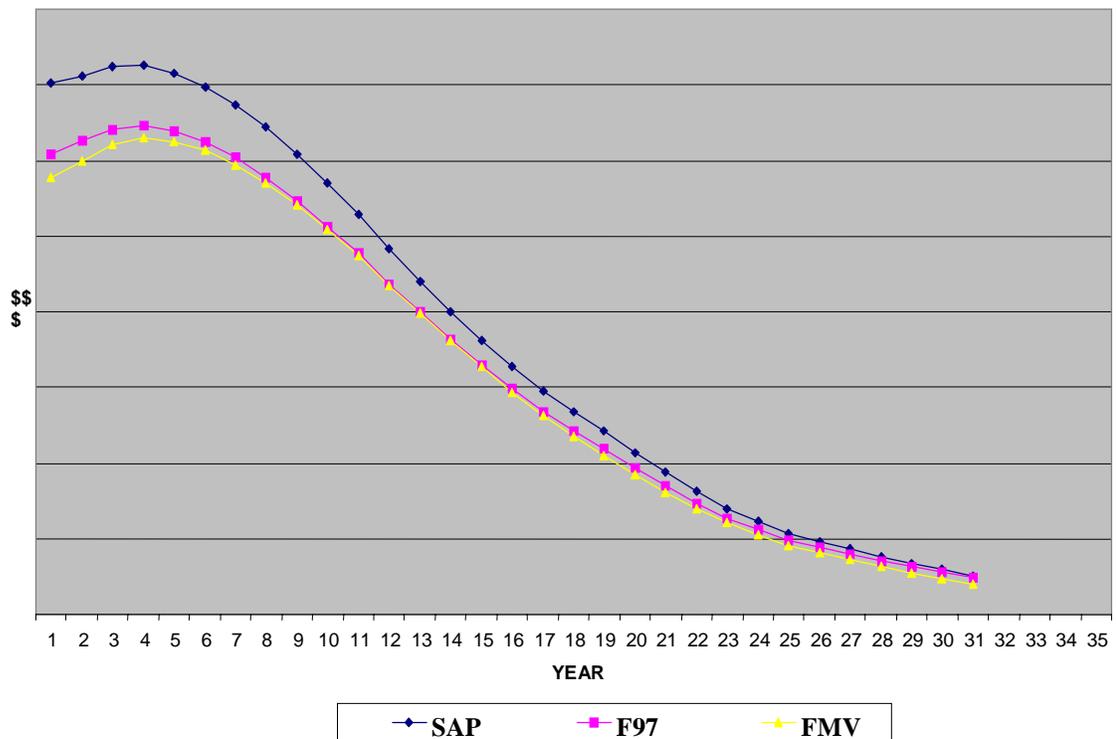


CHART 5  
PRE-TAX INCOME—RATE POP-UP (ISL)

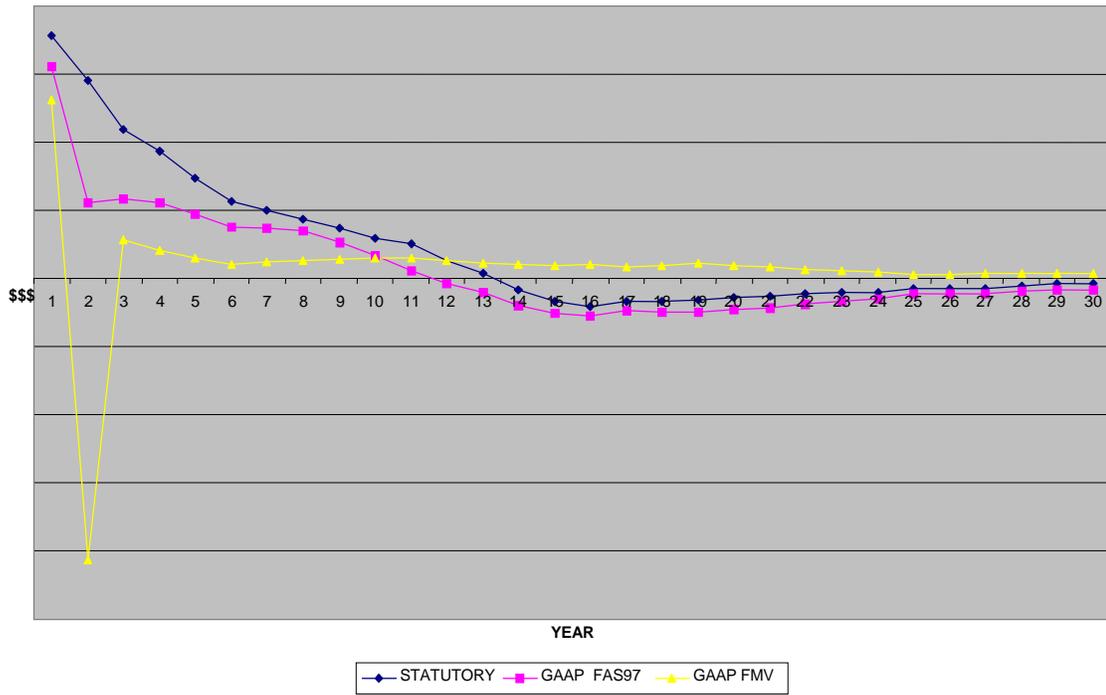


CHART 6  
RESERVES—RATE POP-UP (ISL)

