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## MARKET-VALUE ACCOUNTING

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Panelists: ARNOLD A. DICKE  
              JAMES D. WALLACE  
Recorder: DOUGLAS C. DOLL

*The following topics will be discussed by the panelists: FAS 107, FAS 115, market value of liabilities, the impact of changing interest rates, and statutory issues, including market-value-adjusted products.*

MR. DOUGLAS C. DOLL: This is a panel discussion on market-value accounting. We are here to cover two main topics. Our first speaker, Jim Wallace, will cover *Financial Accounting Standard 115 (FAS 115)*, its aftermath and implementation issues. Our second speaker, Arnold Dicke, will cover the market value of liabilities, where the profession is heading, liability accounting and what might lie ahead.

Jim Wallace is a partner with Ernst & Young in Des Moines. He is both a CPA and a FSA. He is Ernst & Young's director of insurance services for the Midwest region. Jim is also on the Insurance Steering Committee of Ernst & Young. He is a current member of the Academy Committee on Life Insurance Financial Reporting, which is currently in the process of finalizing a paper on the market value of liabilities.

Arnold Dicke is the executive vice president and actuary at USLIFE Corporation in New York. He is also the SOA Vice President in charge of the Life Practice Area. Arnold's interest in market-value accounting issues began when he was chair of the Academy's Committee on Life Insurance Financial Reporting, during which time he visited the FASB on several occasions. More recently he has served as chair of the Working Group on Liabilities of the American Council of Life Insurance (ACLI) Task Force on Market Value accounting.

MR. JAMES D. WALLACE: I'm mainly going to cover the actuarial adjustments arising from *FAS 115*. There have been many developments since *FAS 115* was issued. We're going to go through what those developments were and then review some sample financial effects.

*FAS 115* is the standard that dramatically changed the way that insurance companies account for bonds. It is assumed that you are familiar with *FAS 115*; but, as a refresher I'll remind you of how *FAS 115* required insurance companies to break their bond portfolios into one of three categories, including a "held-to-maturity" category, where you continue to hold bonds at amortized cost as before *FAS 115*; an "available-for-sale" category, where you carry the bonds at fair value, running the unrealized gains and losses directly through equity, or a "trading account" portfolio where you would carry the bonds at fair value, but would take the unrealized gains and losses through income rather than equity. That was the essence of *FAS 115*.

In late 1993, when *FAS 115* was coming out, there was a survey conducted of insurance company CEOs which indicated that they expected maybe 55% of their securities would be classified as available for sale, compared to an actual of less than 25% before the advent of *FAS 115*. That was the expectation. In fact, later surveys showed that the

industry (in 1994) actually classified about three-fourths of all their bonds in the available-for-sale category (at fair market value). A second survey was conducted with the same CEOs to determine their expectations about the impact of *FAS 115* on their operations. About 48% of the ACLI member companies were covered by the actual responses that were received. And, the responses represented some 65% of the total assets of the industry.

The first question that was responded to was, to what extent would *FAS 115* influence the company to place a higher priority on accounting results versus maximizing economic value? I find the results troubling, as 25% of the CEOs responded that *FAS 115* would cause the company to focus more on accounting results than economic results, meaning that accounting was driving economics to at least a "great deal" or a "moderate amount." A survey question also asked the tendency to which managing accounting results would cause a shift in the company's actual business strategy. Again, a quarter of the respondents said there would be at least a "significant" to a "moderate" amount of shift in business strategy because of *FAS 115*.

Finally, the CEOs were asked to what degree they expected the users of their financial statements to misinterpret swings in equity that were going to be caused by *FAS 115*. The CEOs indicated they had a real concern that the results would be misinterpreted. We're going to look at some actual results that I think show why the CEOs were concerned.

With that background, I want to cover the accounting actions that occurred in 1995 and 1994 with respect to *FAS 115* that helped clarify what *FAS 115* actually meant. The first, and probably most important one, was an announcement made in January 1994 by the SEC. The SEC indicated that certain assets and liabilities should be adjusted pursuant to *FAS 115*. Those assets and liabilities included policyholder liabilities (that is, reserves), deferred acquisition costs, the present value of future profits on *FAS 97* products, which is essentially deferred acquisition costs in a purchase situation, and deferred taxes. Basically, the SEC said that if you had unrealized gains on bonds that were in your available-for-sale category, so that you were marking the bonds to market, you were supposed to pretend that the unrealized gains on the bonds were actually realized. To the extent that realized gains would have impacted policyholder liabilities, deferred acquisition costs, or the present value of future profits, you were supposed to adjust those balances on your balance sheet, running the impact, net of taxes, through equity, not through earnings. So, in other words, if you had big unrealized gains, you would assume those were realized gains. Those assumed realized gains would affect your gross margins on your *FAS 97* products. Those gross margins, of course, being different (i.e., higher) than without those assumed unrealized gains would cause accelerated amortization of DAC. Also, those gains could cause companies to modify certain policyholder liabilities.

Where you're required to pass through realized gains to policyholders on certain par or pension contracts, you would assume those unrealized gains would be passed through as well and adjust policyholder liabilities, accordingly. Some companies reasoned that while they may not be contractually obligated to pass through realized gains, even on plain vanilla deferred annuities and plain vanilla universal life, as a practical matter, they were going to have to subsidize future crediting rates with the realized gains. Therefore, some companies actually adjusted liabilities for deferred annuities and universal life; this may be

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somewhat aggressive but it was done pursuant to this requirement of the SEC. This was when we had big unrealized gains.

In July 1994, due to rising interest rates, those big unrealized gains evaporated and in many cases were unrealized losses. The SEC wanted to clarify that these adjustments cut both ways. That is, just as when you had big unrealized gains which caused you to write off additional DAC, if you had unrealized losses, that would cause a negative amortization of DAC and cause you to write deferred acquisition costs up. The SEC said that was appropriate if you write only your deferred acquisition cost back up to the original amount that was incurred and capitalized plus interest that would have accreted on the balance since the day that it was incurred, which is a significant number for many companies.

On a somewhat different matter, the SEC got into the act again in January 1995 on *FAS 115* and said that they expected a disclosure of the reason for any transfers of securities that have been classified as held to maturity. So, if you classified a security as held to maturity and carried that security at amortized cost and then transferred the security out, you had to disclose the reasons for that. The SEC staff said that they believed that held to maturity means held to maturity. If you were to transfer a security out of held to maturity into the available-for-sale category, other than for reasons specified in *FAS 115*, then you had some explaining to do. In fact, the SEC said that any transfer out of your held-to-maturity category into the available-for-sale category, could taint the entire portfolio. So, if you had classified a significant portion of your securities as held to maturity and carried those at amortized cost, and then transferred one security out, the SEC could tell you that you now had to mark all of your bonds to market because your judgment had been tainted and is suspect. In addition to that, this could cause a company not to be able to use the held-to-maturity category for two years or so. So, all bonds would have to go into the available-for-sale category. To show you how extreme this was, some companies were getting tender offers for bonds in their portfolios. (Rates had been bouncing around and certain corporations who had issued high-interest bonds made tender offers with significant premiums to buy back their debt). Clearly, that is not a situation that anybody contemplated when they purchased the bond and decided which portfolio category to put it in. When insurance companies tendered their bonds pursuant to tender offers with very sweetened premiums, the SEC indicated that these "sales" tainted their fixed maturity securities category and they may have to mark them all to market.

The final accounting development under *FAS 115* that you ought to be familiar with is the very quirky way that *FAS 109* (which is the deferred tax statement) interplays with *FAS 115*. As you may know, *FAS 109* causes you to set up deferred tax liabilities or assets on differences between book basis and tax basis of assets and liabilities. One of the differences would be unrealized gains on bonds that were in your available-for-sale category. So if you had some bonds that you put in your available for sale category that had big unrealized losses (which you don't get to recognize for tax), the difference between your GAAP carrying value and your tax basis (amortized cost); that is, the unrealized loss, would be tax affected. That results in a deferred tax benefit, that is, if you sold those bonds, you would realize a big tax benefit because of the losses. This gives rise to a deferred tax asset. That's okay as long as you think you can actually realize that tax asset. If you don't believe you can recover that tax asset, you set up an allowance. It's called a valuation allowance against the deferred tax asset. Well, what the FASB said, which many in the industry are currently fighting, is that if you have a deferred tax asset on the unrealized loss on your available-for-sale securities, you run that tax asset through equity.

So far, so good. If you want to set up an allowance against that deferred tax asset, you run that through equity also. That sounds fine, too. However, if you determine later that you didn't need an allowance for your deferred tax asset, you run the release of the allowance through income. What if you did not initially set up a deferred tax asset allowance? If you decide later on that really there's no way to utilize all of those realized losses that would come out of that portfolio and so you really can't recover your deferred tax asset, (it's going to expire in loss carryforward periods), then you set up an allowance for that deferred tax asset at that time. The effect of the allowance has to go through earnings, even though unrealized losses and related taxes went through equity previously. It seems kind of unfair. So, some companies, which I sure don't recommend, set up a great big allowance reserving for all of the deferred tax assets on the unrealized loss on December 31, 1994, even when they thought they could recover them. They did this to avoid later taking the establishment of an allowance for the deferred tax asset through earnings if the asset later proved unrecoverable, or to create a bunch of earnings by later releasing an allowance that they really didn't need.

Let's look at the impact of 115 at the end of the third quarter of 1994. Overall, as I think I said earlier, three-fourths of the industry's bonds were classified as available for sale. Rising interest rates caused these bonds to be significantly underwater for many companies. Analysts were making comments indicating they were more favorably disposed to companies who allocated at least 50% of their portfolio to available for sale, if the companies were managing interest-sensitive business. Companies were getting concerned about that though because they had huge unrealized losses. Many companies began to classify new purchases in 1994 in the held-to-maturity category. Here's why: for the available-for-sale securities (the ones you have to mark to market), the ratio at December 31, 1993 of the market value (i.e., the carrying value) to the amortized cost averaged about 105.8%. But, by September 30, 1994 the ratio of the fair market value to amortized cost was more like 97%. That is a very large swing.

I'm going to share with you some real numbers that show what that did to the industry's equity; suffice it to say, this caused a great deal of consternation. In fact, at the end of the third quarter, the separate component of equity that represented the unrealized loss averaged about 64% of the unrealized loss. Now, what that means is if you have \$100 of unrealized loss, that \$100 would be offset by negative amortization of deferred acquisition costs, deferred taxes, and maybe policyholder liabilities, so that, on average, \$64 is charged against equity. In fact the component of equity that represented the writedown on equity due to the unrealized losses after all the accounting offsets, represented, on average, at the end of the third quarter, about 10.6% of equity. Equity was reduced on average for the industry by 11% because of the unrealized losses. The swing in equity from December 31, 1993 to September 30, 1994, because what was unrealized gains at the end of 1993 but was unrealized losses at September 30, 1994, was about 23%. So companies saw their equity deteriorate about 23%.

By the end of the fourth quarter, things got worse. Even so, I think that as rates went up and capital continued to deteriorate as most portfolios were underwater, significantly more companies were providing a fairly significant valuation allowance against the deferred tax asset. That was because when you have a \$2 billion unrealized loss, the likelihood of being able to actually utilize losses of that magnitude on a tax return may be fairly remote. One interesting problem that companies encountered at year-end was that when you have a big unrealized loss, it, of course, decreases gross margins causing you to have a pop up in

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DAC which causes you to reverse previous write offs of deferred acquisition cost, and recoverability issues can arise. If you're several years down the road in the life of a policy and you're going to restore the unamortized deferred acquisition cost all the way back up to the original cost deferred plus interest accredited or assumed accredited for the years since issue, the likelihood of that asset being recovered can be fairly remote.

Let's consider some real numbers I just got from 10-Ks that were filed on March 31. I picked three very large stock companies. They are all household names and have portfolios greater than \$20 billion. Let's look at what the impact of *FAS 115* was on them.

### COMPANY A:

At the end of 1993, this company had \$1.594 billion of unrealized gains in its available-for-sale portfolio. By the end of 1994, it had become an unrealized loss of \$1.387 billion. So they had almost a \$3 billion swing in the fair market value of securities carried at market value. The related DAC adjustment in 1993 (remember that we have an unrealized gain) was an acceleration of DAC write off of \$0.5 billion. They did not adjust policyholder liabilities (that's an uncommon adjustment). The tax effects of the unrealized loss net of the DAC write off was \$364 million and that just happened to be 35% of the previous two numbers, for a total equity adjustment of \$676 million. So they had a net pop up in equity of \$676 million attributable to the unrealized gains. Well, by the end of 1994, as you know, rates had gone the other way, and big unrealized losses were booked while the DAC adjustment had positive impact on equity. It's a pop up in DAC, not a pop down. The company still had no policyholder liability adjustment, but had a big tax effect which the company reserved for by setting up a big deferred tax asset allowance under the theory that they may not be able to recover taxes on losses that big. The net result was a \$950 million write down in their equity for a \$1.6 billion swing in equity attributable to *FAS 115* for all of calendar year 1994.

### COMPANY B:

The company had a policyholder liability adjustment. I think the reason for that is this company has a great deal of par business. I believe that they pass through realized gains to the par policyholders despite the fact they are a stock company. So when they have big realized losses or gains, those gains are set aside in a liability for the policyholders. Once again, the numbers went from almost a \$2 billion unrealized gain at the beginning of the year to about a half a billion unrealized loss at the end of the year resulting in a swing in their equity of a \$1.2 billion net of the adjustments.

### COMPANY C:

They had a \$1 billion swing in the unrealized gain or loss causing about a \$0.5 billion swing in equity. It's interesting that this particular company saw no need to set up a deferred tax asset allowance. They apparently believed that the tax benefit of those unrealized losses could be realized and saw no need to set up a tax allowance.

Currently, we have a one-sided scenario as GAAP does not provide for marking liabilities (i.e., reserves) to market. Arnold's going to talk about the possibility of market valuing liabilities so I'm not going to talk about revaluing liabilities at all, except to say that we're really the only industry that has an interest in this. There must be a dozen committees or so working on different ways to do it, but unfortunately, I think we're on our own here. Arnold may have a different perspective on that. Nonetheless, despite having said that,

there's an annual survey that goes out with respect to the FASB's agenda. It asks what ought to be on the FASB's agenda and there was a very high ranking of deliberating the fair market value of liabilities. In the meantime, some companies have taken action to balance the scales when they have to mark much of their assets to market, but can't mark the liabilities to market which is pursuant to *FAS 107*. Some companies have put a supplemental fair market balance sheet in the footnotes of their financial statements. Under *FAS 107* you have to disclose the market value of certain liabilities, but not all of them. In particular, market value for reserves for investment contracts (that is, annuities) would be disclosed, but you wouldn't have to disclose universal life or traditional life reserve market values. Some companies, however, have disclosed a full fair market value balance sheet in the footnotes. You are not, as of yet, allowed to use fair market values for your main financial statements, that is, the statements that you publish in your stockholder's report. But the footnotes to your published annual reports can include a full fair market value balance sheet. I think we may see more of that in the future. With that I'll turn it over to Arnold to tell us about what is happening with marking liabilities to market.

MR. ARNOLD A. DICKE: Let me discuss the numbers: 300 and 900. Recall Jim said the average loss in equity at the end of the third quarter of 1994, after the adjustment for *FAS 115*, was about 25%. I did a very random sample of three companies at the end of the year—the three companies whose annual statement I happened to have seen most recently. The first two of these companies are substantial companies that have been reporting for a long time. These stock companies show a reduction of more than 30% in equity at year-end. This reduction of 30% of equity resulted from an increase in interest rates of about 300 basis points. I thought back to the time when I last worried about increased interest rates—the early 1980s? Remember those times? I was trying to think of how high they went? I think a 900-basis-point rise above the bottom would be a conservative estimate—they might have gone up more than that. So three times 30% gets you to 90%. If it is a little more than that, you'll have no equity, on the average, in the industry.

Actually, for the first time, I've seen an annual statement with negative equity. It's a new company; it's very healthy on a statutory basis, but with negative shareholders' equity. There are many people who wonder whether it's necessary to worry about equity. So far, the stock analysts have tended to ignore equity. They still look at earnings and just apply some multiple. I still wonder what will happen if everything starts looking red, or if enough big companies come out with negative shareholders' equity and people like Joe Belth start wondering what in the world it all means. If policyholders start thinking, "My company has negative equity; is that good? What should I do?," their agents might say, "Well, I can always sell you another policy," but we've heard that one before, right?

I think the possibility for a significant problem is there. That's the main message I'd like to leave with you. Now, this is my opinion, not the opinion of any of those groups with which I am associated or of my company. But, my personal opinion is that the potential for a big problem exists. I must admit that many people don't agree, particularly representatives of certain companies that have most of their assets in the hold-to-maturity category. These companies are probably mostly mutual companies. It has been difficult getting the industry motivated because these companies prefer the status quo. And, as Jim said, it's only the life insurance industry that's going to be pushing this kind of mark-to-market exercise because the way FASB is coming at it, nobody else would benefit from it.

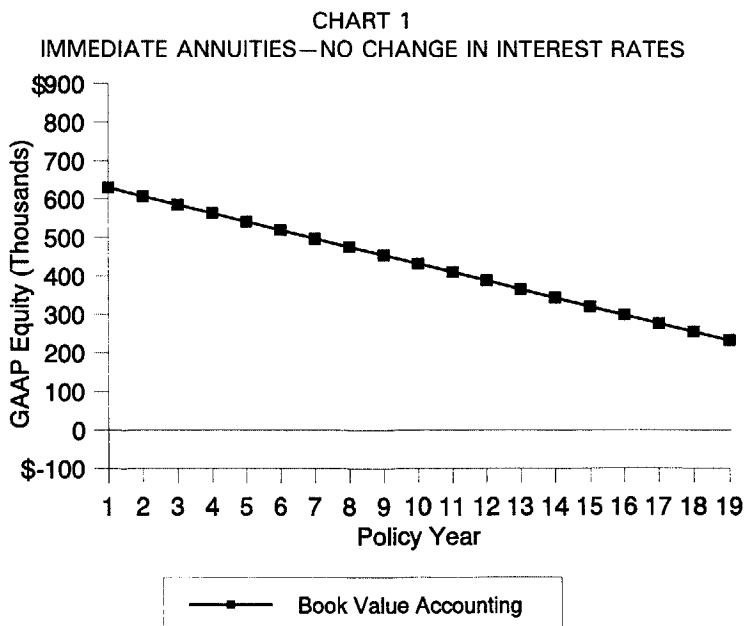
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There are regulators and other people who think it's the right thing to do, but we're the only industry that has shown any interest in it.

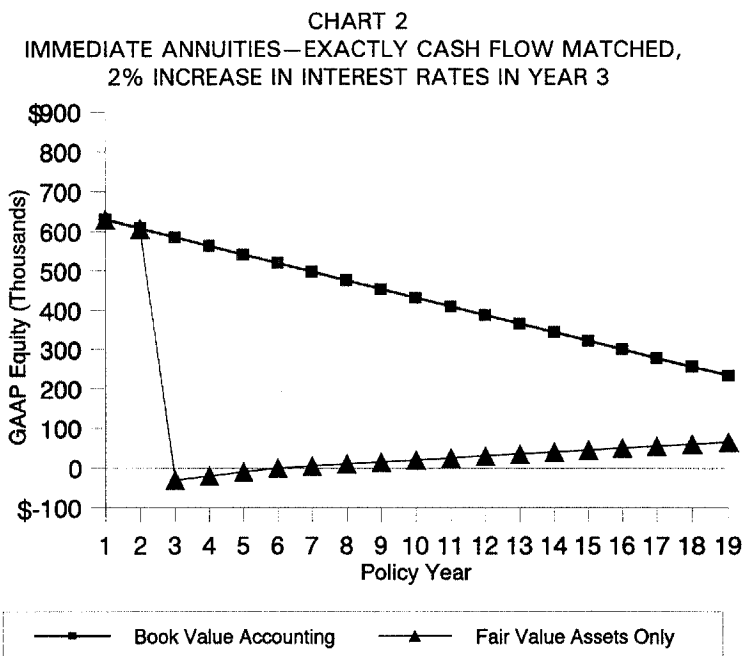
In any case, my message is that this could be a problem in the future, and actuaries, being future-oriented people, might want to carry this message back to their managements. Some of the retrospectively-oriented people, otherwise known as "accountants," and the currently-oriented people, known as "marketing people," don't necessarily see a problem yet and won't consider it a big problem as long as the share price doesn't go down too much, but I still think it's likely enough to warrant concern.

The second message that I want to give you is this: there *is* something that can be done. In fact, there's a whole range of things that can be done, and that's what I'm about to show you.

The graphs that I am using are the result of some modeling done by Don Sanning of Principal Mutual, Kevin Palmer of IDS, George Silas of New York Life, and Alan Goldberg of Provident. Let me explain how their models and their graphs work. Chart 1 shows GAAP equity plotted against policy year for a block of immediate annuities backed by long-term bonds whose cash flows match those of the liabilities exactly. The graph slopes downward to the right, because each year the earnings are assumed to be distributed. Thus, the graph represents the equity that continues to be associated with the product. Whether the graph shows book value accounting prior to *FAS 115* or fair value accounting after, the graph shows a downward sloping straight line because I've assumed no change in interest rates.



What does it look like under the two kinds of accounting—before and after *FAS 115*—if interest rates do change? Let's assume a 2% change in interest rates in year three. On Chart 2 you can see that *FAS 115* causes a major revaluation of the assets. There is no impact on pre-*FAS 115* equity from the change in interest rates because I'm assuming exact cash-flow matching. But when the assets are revalued under *FAS 115*, they go down in value, and so does shareholders' equity. This spurious reduction in equity is a problem.



To deal with this problem, I have not just one method, but a whole catalog of methods. This catalog is intended to include all methods that mitigate the effect of *FAS 115*—not only methods that value liabilities at market or some surrogate of market, but also methods that mitigate the spurious effects of *FAS 115* in other ways. Of course, not all the effects of *FAS 115* are spurious, as they are in Chart 2. There are true economic effects we don't want to cover up. We want to eliminate only the spurious effects.

In discussing the cataloged methods, I'm going to take the point of view of the users of financial statements. The issuers of financial statements obviously have a strong interest in these methods but my concern is with the users. GAAP financials are intended for shareholders primarily, as well as people who work for shareholders, like analysts, and people otherwise involved in investing in the company. GAAP financials are not, incidentally, designed for policyholders and regulators—statutory accounting is designed for these users.

Let me begin by reminding you that there are three categories of assets under *FAS 115*: trading securities, in which unrealized capital gains and losses go right through earnings



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because the securities are held at market value; hold-to-maturity securities, in which unrealized capital gains and losses are not reflected at all; and available-for-sale securities, in which unrealized capital gains and losses go through equity.

Again, to be sure we're all on the same page, let me quickly review the treatment of liabilities under GAAP. Product liabilities are accounted for under one of three standards. First, there is *FAS 60*, the oldest of the three standards. *FAS 60* sets up a benefit reserve, which is based on assumptions that have provisions for adverse deviations or margins in them—conservative assumptions. This is one of the few places in GAAP accounting that margins are permitted. The cash flows are discounted at the asset earnings rate. This is an old way of doing things that doesn't take account of much new financial technology. However, it is the way GAAP is applied to most of the traditional policies, including those immediate annuities we were looking at a while back. *FAS 60* also sets up a deferred policy acquisition cost asset (DPAC) which is amortized as a percentage of premium.

When sale of universal life and deferred annuities became common, *FAS 60* was supplemented by a new standard, *FAS 97*. Under *FAS 97*, there is no benefit reserve. In fact, there are no premiums; the money that the insurer holds is considered to be the policyholder's money held on deposit, not a benefit reserve.

*FAS 97* does, however, provide for a deferred policy acquisition cost asset. The deferred policy acquisition cost is amortized as a constant percentage of "estimated gross profits." These "gross profits" are gains and losses on the various pieces of the business. In other words, gross profits equal the excess of the cost of insurance rates that you charge over the benefit claims that you actually pay, plus the excess of contract administration charges over actual administration cost, the excess of investment earnings over interest credited, and so forth.

Finally, we now also have *FAS 120*, which determines GAAP for certain participating contracts. This standard actually just points to AICPA Standard of Practice 95-1, which has the formulas in it. This standard sets up a benefit reserve, as was the case for *FAS 60*. However, this benefit reserve is more like a statutory reserve than an *FAS 60* benefit reserve. It is set up on conservative assumptions, and the assumptions are not unlocked. The deferred policy acquisition cost is amortized as a percentage of "estimated gross margins." Estimated gross margins turn out to be premium plus investment earnings less benefits, expenses, and so forth; in other words, "gross margins" are very much like what we usually call "book profits."

Let us review the impact of interest rate changes on current accounting. Under *FAS 60*, there's no effect. Under *FAS 97* and *FAS 120*, the unrealized capital gains and losses are treated analogously to realized capital gains and losses under a position stated by the SEC shortly after *FAS 115* was adopted. Recall that, under *FAS 97*, realized capital gains affect the deferred policy acquisition cost amortization. The capital gain is investment income, and therefore, increases the current period gross profit. With a larger gross profit, more deferred policy acquisition cost can be amortized in the current period. The net result is almost like spreading the capital gain because if more of the deferred policy acquisition cost is amortized in the current period, you have less deferred policy acquisition cost for later periods (as long as things like recoverability don't come into play). One of the unusual things about this is that the impact depends on the fraction of the gross profits used to amortize the deferred policy acquisition cost. In other words, it depends on

the profitability of the product. If you're using up 99% of the present value of gross profits to amortize your deferred policy acquisition cost, then almost all the capital gains and losses get "spread." Now my accountant friends hate it when I say that capital gains and losses are "spread" over time. They point out that if you have a capital gain, you also have less investment income on the reinvested principal, so the DPAC amortization is just offsetting that change. But, of course, that's what I mean, too.

Unrealized gains and losses are treated the same as realized ones because the SEC said it should be so. I don't think FASB is 100% happy with the SEC's position, but that's the way it's being done now by any company that cares about the SEC. The impact is reported in equity or through earnings, depending on whether the assets are available-for-sale or trading securities. In addition to the DPAC, other items, such as policyholder balances, may be treated similarly.

That's enough introduction. As I said, one message is, it's a big problem. The other message is: the problem can be dealt with—actuaries have a lot of ways that we can deal with this problem. Probably we're not the only people with solutions, but it seems to me we should make it clear that we do have methods that will do the job.

I am going to present a catalog that can be used to mitigate the effect of *FAS 115*. I've put them in three categories.

Type A methods are what I call "discounted cash flow surrogates for market value." These are the methods most people are thinking about when they say, "Let's try to mark liabilities to market." These are the methods that people mean when they say, "Okay, there's no direct market for insurance liabilities, but isn't there some analytic way I can use to find a surrogate for market value?" The catalog has two Type A methods.

The Type B methods are completely different. These take the view that another way to mitigate the problem caused by *FAS 115* is to make use of the work life insurers do to manage interest rate risk. The industry has been dealing with the problem of interest rate sensitivity for a long time now, and it has many tools in place. Managing interest rate risk is a major function in the life insurance industry. We've developed many techniques for carrying it out, and some of these techniques could be used to mitigate the spurious effects of *FAS 115*. I will list four Type B methods.

Finally, Type C methods involve adaptations of the existing accounting framework to deal with situations in which interest rates are not static. There are several ways we could do this as well. I list three specific proposals. To begin with, Type A methods are surrogates for market value. The name I've given to Method A(1) is liability-spread discounted cash-flow method. Another name for it would be the bond valuation method. One of the methods people use for valuing bonds is to look for the internal rate of return on the bond at issue and express it as a spread over Treasuries—either a single Treasury for the same duration or a yield curve of Treasuries at the time of issue—to determine a spread or spreads at issue; then, lock in those spreads. At each future duration, the value of the liability is the value of the cash flows discounted at the current Treasury at that point in time, plus the fixed spread or spreads.

This method is well suited to financial products like GICs and single-premium deferred annuities. The people in your investment department probably think this is the right thing

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to do. It is not as well suited to protection-oriented products, particularly those with long streams of recurring premiums, because the cash flows may be alternately positive and negative, and this makes it hard to solve for internal rates of return.

In addition, Method A(1) can be criticized with respect to the pattern in which earnings are released. This may seem to be more of a problem for issuers than users of the financial statement. Actually, it is a problem for the users as well, because people are used to a certain pattern of release of earnings in GAAP—for example, as a percentage of premium. But, under Method A(1) the earnings are released as a difference between spreads. As an example, suppose a product is backed by bonds. Each bond has a yield you could express as a spread over Treasuries. You either know the spread directly or you can use this Method A(1) to determine one. You can do the same thing for the liabilities. So what are your earnings? They are the difference between these two spreads—the asset side spread and the liability side spread. Earnings emerge as a percentage of assets or, approximately, reserves. This pattern would be very different from what we're used to today, especially for products such as whole life.

There's another method that was proposed to FASB by Mike McLaughlin and me. I am referring to the actuarial appraisal method, a version of value-added accounting or embedded-value accounting. Under this method, the value is based on discounted net book profits, rather than discounted liability cash flows. If you have an actuarial appraisal value of a company and you know the market value of the assets, the balancing item is the liability. As I said, this method was presented to FASB, and we almost had to replace a board member because of apoplexy. He said it's absolutely impossible that the assets should come into the calculation of liabilities in any way, shape, or form. Actuaries are familiar with this method, so I put it in the catalog.

One problem is choosing a discount rate. How do you select a discount rate? The best approach would be to base it on actual transactions in the market for assumption reinsurance. This is not completely infeasible—there *are* transactions. When I was consulting, I had a fairly good idea of what discount rate was implicit in the transactions. Remember, the rate determined from reinsurance transactions is appropriate as a discount rate for the net book profits. It's not appropriate as a discount rate for the liabilities alone. There's no market for the liabilities alone. Nobody buys life insurance liabilities independent of assets—you don't know what they go for or what the discount rate would be. So this is one advantage of the appraisal method: there actually is a market, but it's very thin. There aren't many transactions, and there certainly aren't many that involve liabilities similar to those of a given company. This sparseness is a problem with the actuarial appraisal method. An alternative would be to use a spread-at-issue method to get a discount rate. One of the good things about Method A(2) is that it incorporates statutory restrictions. It incorporates statutory reserves and even, if you like, risk-based capital restrictions.

By the way, *FAS 107* is a standard that, among other things, permits disclosure of fair values of liabilities, determined on any reasonable basis. It seems to me there is a golden opportunity here for actuaries to say, "Why don't you let us put an appraisal value in your *FAS 107* disclosures? We'll make a little balance sheet out of it, and you'll have everything right there and if anybody wants to buy your company, they'll know exactly what it's worth." This exercise could be very beneficial to the share value for certain companies. If I were a consultant, I'd try to sell this concept.

The actuarial appraisal methodology is understood by the industry, but as I said, it's not accepted by FASB. Thus, it probably will not see the light of day, but it is in the catalog because I think it is a valid method.

Now, let us turn to Type B methods. These are methods that make use of interest rate risk management techniques that companies have developed. The first one, Method B(1), is called the interest maintenance adjustment (IMA) to distinguish it from the interest maintenance reserve (IMR) used in statutory accounting. Unlike the IMR, the IMA is two-sided: it can be an asset or a liability, depending on whether more capital gains or capital losses are being deferred. Other than that, it works just like the interest maintenance reserve, except that the adjustment is run partly through equity to take account of the fact that you have some available-for-sale assets.

Variations of this method were proposed to FASB by many respondents. It solves the gains trading problem, which seemed to be the most serious problem *FAS 115* was supposed to have solved. Gains trading is the buying or selling of certain assets on a particular date in order to affect reported earnings. The IMA does solve that problem. The biggest problem caused by gains trading is the sale of what amounts to half of a hedge. If you have a GIC and you have some assets backing it up, exactly matched to the liability, and if interest rates fall, you can record capital gains on those assets if you sell them and replace them with assets with a lower coupon rate. Obviously, you book a gain, but you leave an unhedged position on your balance sheet. That's what FASB doesn't want to happen. Since FASB required a test to be done before hedge accounting is permitted, the IMA proposal specifies passing a correlation test to make sure that the IMA is used only for assets that are correlated to the liabilities. As I said, the IMA (without the correlation test) was rejected by FASB the first time around.

The other Type B methods are all based on cash-flow testing, the other major technique of interest rate risk management. Method B-2 is a direct use of cash-flow testing techniques to produce a liability value. Basically, cash-flow testing determines a set of assets whose future cash flows are adequate to support the liabilities. Take the carrying value of the assets, whether it be market value or book value or a combination, and call it the fair value of the liabilities. Variations of this method apparently are used in most of the other English speaking countries of the world. This may be a factor in its favor when FASB considers it because the board was asking about models that have been used in other countries.

It should be recognized that the cash-flow valuation method (CFVM) goes beyond what we do in the U.S. for statutory adequacy testing. Rather than just testing a statutory reserve, the CFVM involves setting a reserve. I believe this can be done with current technology. Let me refer you to the Proceedings of the 1987 Valuation Actuary Symposium, where an example was worked out.

A simplified version of this approach that can be applied on an individual policy basis is Method B(3), the cash-flow ratio method. To apply this method, you determine an adequate set of assets, as for the CFVM, but then take the ratio of the carrying value to the book value of these assets and apply that ratio to all the calculated GAAP numbers, such as the benefit reserve and the deferred policy acquisition cost. The change so determined is allocated to earnings or equity, depending on whether the assets are trading securities or available-for-sale. Again, this requires setting the reserve through cash-flow

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testing, not just testing a preset reserve. It's an approach that provides individual policy values, which should please FASB. Board members have stated that they believe liabilities should be valued policy-by-policy, and not as a group or on a block-of-business basis.

The final B method is a synthesis of two methods. Method B(4) resulted from the attempt by one company to use discounted cash-flow methods for *FAS 107* disclosures. The company discovered that its portfolio didn't track Treasuries very well. That is, the spread of its portfolio relative to Treasuries moved a great deal because the spreads relative to Treasuries of the corporate bonds in which it had invested changed from time to time. The problem is what I call "index disconnect." You're using a Treasury index, but it's not really the right index for the assets you're trying to index. One solution would be to find an approximate corporate bond index. Rather than use an index, the company decided it would like to use the yield on its own asset portfolio as a discount rate. Using your own asset portfolio can cause a problem, however. It's actually a problem that affects current *FAS 60* accounting. The problem is this: the choice of assets affects the value of the liabilities. Suppose you hold a high percentage of junk bonds or "high-yield assets." These assets have a higher yield than higher quality bonds; consequently, the discounted cash-flow value for liabilities is lower. This effect goes in the wrong direction, even if you agree to allow the two to be connected. To correct this "asset-choice problem," the company decided to make use of cash-flow testing to test the discounted cash-flow liability and make sure that the liability was adequate. This allowed the company to use a relatively familiar technique to evaluate liability values on an individual policy basis and still be comfortable that it was not deluding itself by choosing assets that produce too low a liability.

Finally, let us turn to Type C Methods. Type C Methods modify or expand current GAAP methods. Their advantage is that they start with a current GAAP method, so the change is limited to the insurance industry. In fact, apart from *FAS 60*, the effect is limited to the life insurance industry.

First, let us discuss Method C(1). Method C(1) calls for unlocking the interest rate in *FAS 60*. The idea is to take the average asset portfolio rate to be the "market yield" instead of the "book yield;" that is, the ratio of coupons to fair value rather than to book value. This method is obviously easy to implement, since current systems need no change, but Method C(1) suffers from the asset-choice problem just described. One variation of Method C(1) uses fancy mathematical techniques to fix this problem. The asset-choice problem is a major barrier to this straightforward technique. Also, extending the method to *FAS 97* or *FAS 120* would be very problematic.

Method C(2) is an interesting possibility. The idea is to extend the new participating contract standard, *FAS 120*, to all contracts now covered by *FAS 60*. Remember, under *FAS 120* you amortize the deferred policy acquisition cost as a percentage of "gross margins." You could do this also for *FAS 60* products. This would allow the deferred policy acquisition cost adjustment for realized and unrealized capital gains and losses.

Method C(3) is a variation of Method A(1) that was devised by Kin Tam, Kevin Palmer, Alan Goldberg, and me. The method is a combination of Method A(1), the liability-spread discount cash-flow method, and the current *FAS 60* method. The intent is to solve the recurring premium problem that plagued Method A(1) while retaining the financial

instrument treatment of Method A(1) for single-premium products. Method C(3) bases the discount rate on the spread at issue over Treasuries, just like Method A(1). This means the method works great for financial products or products with only one premium. But if there's more than one premium, the method incorporates a separate deferred policy acquisition cost that is amortized over gross margins like *FAS 120*. Thus, the earnings are assumed to be initially released as a difference between the asset and liability spreads as was the case for Method A(1). However, if that difference becomes negative, the method begins to release some of the earnings as a percentage of premium. The method thus manages to slide smoothly from a method that releases earnings as a difference in spreads over to a method that releases earnings as a percentage of premium as the product changes from a financial to a protection product.

What do we want these methods to do? To begin with, they should mitigate balance sheet volatility and respond appropriately to changes in interest rates. We want to disclose any real economic volatility, but to avoid spurious volatility. Is it important that the method come close to current accounting? I believe it is preferable, at least for protection products, to continue to have earnings released over the premium-paying period. For financial products, we're willing to see a change.

Chart 3 represents the cash-flow method immediate annuity again, showing the effect of an interest rate jump under pre- and post-*FAS 115* accounting. But now the graph has a third line, showing Method A(1) and Method C(3). Method A(1) brings the graph back to where you would expect it to be. Almost all of the proposed methods have the same result or do this for immediate annuities. But if the annuity is not cash-flow matched, you have something really different.

Chart 4 shows the same product, but backed with five-year bonds. The pre-*FAS 115* line still slopes down to the right. Current accounting with *FAS 115* now shows a dip in year three. Why? The fair value of the assets falls when interest rates rise. Method A(1) shows a great increase in equity. Now why would that be? The liability is much longer than the asset, so the fall in liability value exceeds the drop in asset value. Thus, you should see an increase in equity. Thus, the current GAAP accounting method literally goes the wrong way in some circumstances.

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CHART 3  
IMMEDIATE ANNUITIES—EXACTLY CASH FLOW MATCHED,  
2% INCREASE IN INTEREST RATES IN YEAR 3

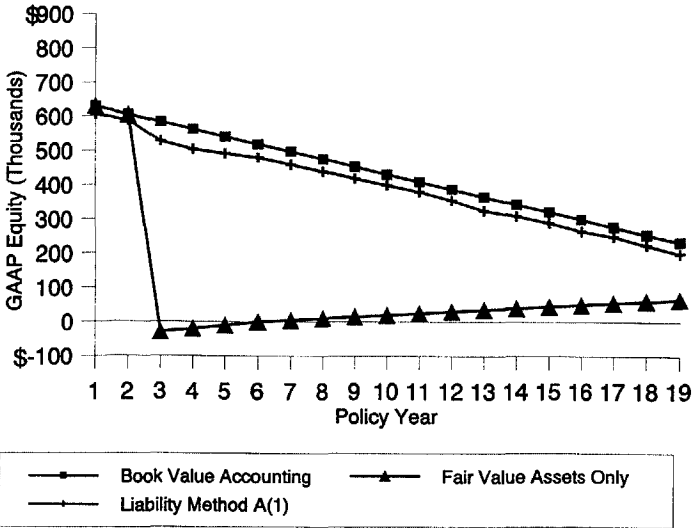
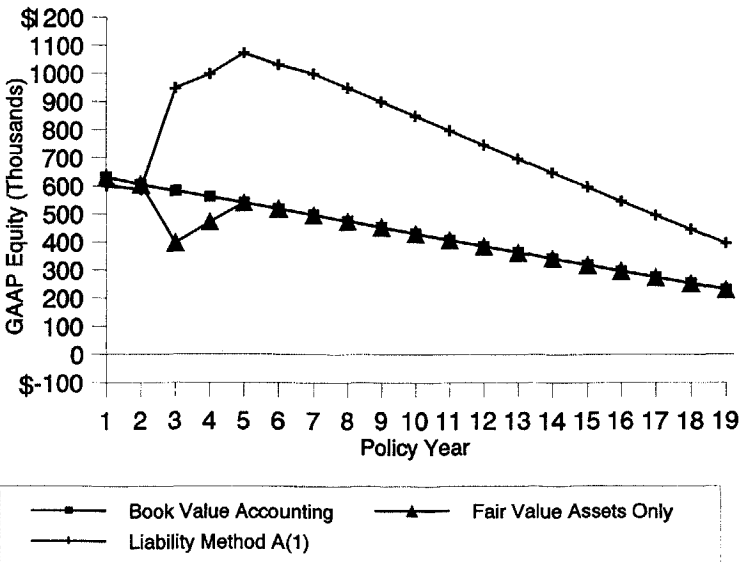


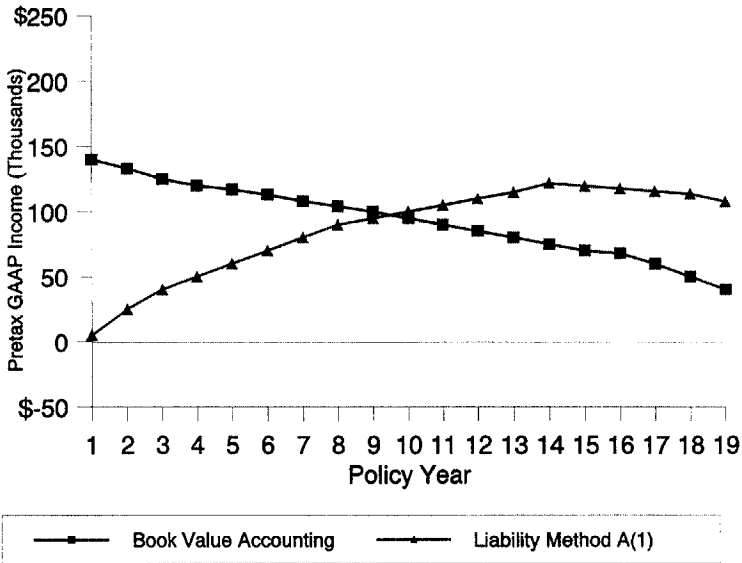
CHART 4  
IMMEDIATE ANNUITIES—MISMATCH WITH 5 YEAR BONDS,  
2% INCREASE IN INTEREST RATES IN YEAR 3



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Chart 5 shows earnings emergence for a nonparticipating whole life protection contract. Instead of plotting equity on the *y-axis*, this graph plots earnings or changes in equity. Under book value accounting with or without *FAS 115*, when there's no change in interest rates, you have declining earnings over the years. That's reasonable. But, if you use Method A(1), the discounted cash-flow method, earnings have a completely different pattern.

CHART 5  
NON PAR WHOLE LIFE  
NO CHANGE IN INTEREST RATES



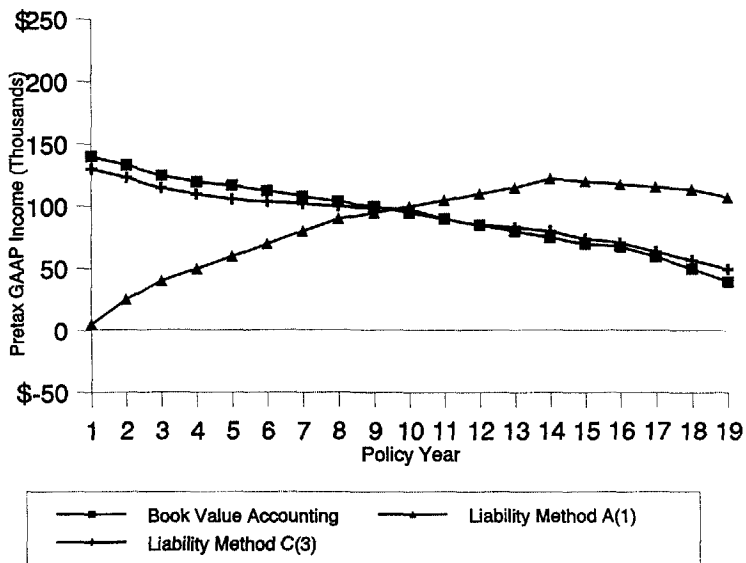
Remember, earnings are released as the difference in spreads and are proportional to assets. So, as a reserve builds up, you gradually get more earnings. This means you have to give your CEO the following message: "I would like to change the accounting method. There's just one little problem. Instead of any earnings coming in during your tenure as CEO, they'll come in when your successor comes along, or maybe his successor. You can make me that successor if you like what I've done for you."

That would probably be a little hard to sell, so let's look at Chart 6 and see what Method C(3) does for these protection products. Here's what happens: Method C(3) is close to current accounting when there's no change in interest rates. So, earnings emerge primarily as a percentage of premium and that's what we're used to seeing.



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**CHART 6**  
**NON PAR WHOLE LIFE**  
**NO CHANGE IN INTEREST RATES**



Let me reiterate my messages. First, there is a major problem. I don't think we can ignore the problem forever; you never know when it could hit us. The second message is there are plenty of ways to approach this problem. Actuaries do know what to do. Sometimes it is hard to make other people understand, but if we work hard enough and investigate enough, I believe we will come up with a method that will solve the liability market value problem.

