1992 VALUATION ACTUARY
SYMPOSIUM PROCEEDINGS

SESSION 10

Understanding Generally Accepted Accounting Principles (GAAP) and Statutory Profitability

Craig R. Raymond
Randall L. Boushek
John W. Brumbach
Paul S. Graham III

UNDERSTANDING GAAP AND STATUTORY PROFITABILITY

MR. CRAIG R. RAYMOND: While I was preparing for this session, I went to our individual lines financial actuary and explained to him what the subject of this meeting was, and told him I was going to follow up with some discussion of specific issues relevant to sources-of-earnings analysis. I asked him what he saw as the key problems on a month-in, month-out basis, since we do detailed sources of analysis on a monthly basis. Without any hesitation at all, he mentioned market-value accounting.

I'm coming to this with a slightly different point of view than most of you, since I am with the Hartford. At the Hartford we have sold a modified guaranteed annuity product since 1984, which we account for in a separate account on a market-value basis for both GAAP and statutory. So we have had a lot of experience with market-value accounting.

Conceptually, I love the idea of market-value accounting. I always have; it sounds great. I think one thing we should all be aware of is that market-value accounting is a subject that is going to be around for a while. It is a hot topic; everyone is talking about it. The accountants are talking about it; actuaries are starting to talk about it; regulators have been talking about it; and now even the Treasury is talking about market-value accounting. Our experience has been with a product that should be perfect for market-value accounting. It is basically a single premium deferred annuity that has an interest guarantee for a certain period of time and in the interim period between the beginning and the end of that guarantee there is a full market-value adjustment. The cash-out is basically at market. We invest to match this guarantee as closely as possible. So, from a conceptual point of view, you have a perfect product that matches up all your disintermediation risk, and you are investing perfectly, so this should work very smoothly. Market-value accounting seems like it should be the answer to give you a nice smooth pattern of earnings. Actually, book-value accounting in a lot of situations could cause distortions in earnings in this type of product, because assets may not be bought or sold to exactly match cash flows. Market-value accounting should smooth out all of these distortions.

Unfortunately, we have found that it solves a lot of problems, but it causes a lot of other ones. I am just going to touch briefly on what comes to mind as the biggest problems that we have run into. As you look at market-value accounting and you hear more about it, just keep these things in mind:

- Calculation of portfolio yield rate especially with modern investment instruments
- Sensitivity of income to slight changes in liability discount rate (portfolio yield)
- Work involved and delays caused by calculation of portfolio yield rate
- Timing of asset purchases and liability sales near valuation date
- Possible mismatch with current tax-accounting methodologies
- Determination of actual interest spread given frequent rebalancing of portfolio
- Timing of interest-rate setting and valuation date for statutory comparison to market-value accounting surrender value

One thing that market-value accounting requires is that you are tying your discount rates or your liabilities to your earned rates on your assets. It is getting more difficult to really determine what our earned rates are on our assets.

One of the things that you come to realize very quickly when you are trying to do this, is that, typically when we go home at the end of the year, we send our data processing people off to do valuation runs over the holiday. When we come back, we are ready to start getting all of our valuations runs out. When you are doing market-value accounting, you cannot do it that way. Because your investment people have a good deal of work to determine exactly what they have on the books and what their earning rate is. You have to determine these portfolio rates before you know what your valuation rates are. So, you have a time delay that puts extra pressure on your investment people to get your reporting done.

One of the most important points is sensitivity of income to slight changes in liability discount rate. This always seems like it should not be a big deal. But, we have found that (and if you work out the numbers it seems pretty obvious, particularly when you are dealing with annuity products where you are talking about a lot of dollars), the reserve you calculate is very

dependent on your discount rate and very sensitive to the discount rate you use. To give you an example, if I have $1 billion of a product that has a five-year interest-rate guarantee, a two basis-point difference in my discount rate, when I am discounting back that cash flow five years from now, can result in $1 million variation in my reserve. When you are doing market-value accounting, this results in a $1 million variation in income and surplus. From a valuation point of view, that is a rounding error, I am not that good. But from a management point of view, that $1 million of income is a fairly important number. For a 10-year guarantee you need only one basis-point difference.

This is a big issue. When we do our GAAP reporting, we have worked with our auditors to allow a small range of variance so that we don't have to be perfect. We set our discount rate within a couple of basis points of what we calculate in order to get the result that makes sense. We then spend a lot of time explaining to the auditors why that result makes sense. From a statutory point we have tightly defined rules that we have to use. We don't have this leeway. As a result, we have a methodology that we thought would give us a smooth pattern of earnings. Instead we have new distortions that have to be dealt with and explained.

Timing of asset purchases and sales near the end of the year can also be a problem. Your investment department does not work as neatly as it should. You do not sell a product today and invest immediately. In valuing the earned rate on your portfolio, if you have not invested exactly everything that came in for the products sold at the end of the year, you are going to get some distortions. We had a particular problem a few years ago where we were running some special arrangements near the end of the year and a significant piece of our annuity sales for the whole year were sold in the last half of December. This caused a lot of problems when we got to year-end, since the investment department had left, for a two-day period, a lot of investments in Treasuries that were planned to be invested on January 2. This just blew apart everything we were doing for accounting because the earned rates and the durations of the investments did not match at all what we had for liabilities. Our strategy was to buy hedges to protect against the time lag of investment, but unfortunately you don't always have the

leeway to reflect that management ability when you are doing your accounting. This is something you need to deal with.

Federal income taxation is currently a major problem for anyone who is trying to sell a modified guaranteed annuity. There is a tax bill (HR-11), that fixes the problem. I hope it will get passed in 1992 (Bush vetoed HR-11). My perspective in the past would have been that going to statutory reporting on a market-value basis would cause differentials between tax and statutory, because tax concepts are very much against market-value accounting. One thing that we have learned in getting our piece of HR-11 is that the Treasury is very receptive right now to market-value accounting, and the Treasury may be more receptive than we would like it to be right now.

The determination of actual interest spread when you try to look at each issue-year block separately for both management and reporting basis, is an issue. One of the wonders of market-value accounting is that it allows you to manage and not have to reinvest and not have to sell and buy because you keep everything valued consistently. What that also does is make it very difficult to tell what your investment department bought for new investments versus just reinvestments from the old.

Timing of interest-rate setting is a problem. This one has also caused us a lot of fluctuation with a market-value-adjusted product, and I guess this would be a nightmare with a book-valued product. We are not setting the rates we base our market-value adjustments off of every day. There is a timing differential between when the rates that we calculate our cash-surrender values off of are set and when our earned rates at the end of the year are set. The result is that, if interest rates change during that period, we could have a distortion in earnings caused by the fact that our calculated reserve could drop below our cash-value floor. If interest rates rise, that calculated reserve drops. But since we have not changed our interest rates, our market-value-adjusted cash-value floor does not change. This requires additional reserves.

I want to reiterate that I am not making these points to say that I think market-value accounting is evil and it is a problem. I think there are a lot of good concepts and a lot of things that we need to deal with. As we all start looking at the issues and looking at what it is going to take to do some type of market-value accounting for broader products or even the ones we're dealing with, there are a lot of practical issues that most of us have not paid any attention to. I know that we at my company are continually surprised by what we are running into, and we have been doing it for a while. So, there are a lot of practical issues that are going to have to be dealt with in order to make this work smoothly. I know that there is at least one actuarial group that is working on it, and these people have started identifying a lot of these issues. It is something that can be dealt with.

Communication of Results

I do want to point out a couple of things that we are doing from a management point of view. I have been fortunate at the Hartford in that our president was an actuary during most of the 1980s, so a lot of actuarial concepts like sources-of-earnings analysis have been very well accepted in the company. We have been doing management presentation of sources of earnings for years. The type of exhibit in Table 1 is what we've always put together. One thing that we've found from a management point of view is that doing a GAAP sources of earnings as we go through the year really doesn't mean a lot to anyone. We have a very detailed planning process. Once we set down what we are expecting for the year in a budget, most of management expects those numbers. What management really wants to know is why your results are different from what you expected -- your expected changes. Once you set a budget, it's not GAAP anymore; it's that number you told management that it was going to see. We calculate sources of earnings under budget, then we calculate sources of earnings of actual. But management is really interested in the difference between the two. That is why Table 1 says "total variance to budget." Normal profit is the loading or the percentage of your expected gross profits for FAS 97.

One of the sources shown is liftoff; I think that this is a great term. It is not mine. I believe it came from the United Kingdom where our former president was from. It refers to interest

spread. I was standardizing most of my exhibits, but when I saw liftoff, I left it on because it is so descriptive. It is the amount we lift off of what we earn. We then give the rest to the policyholders. The rest of the sources are fairly self-explanatory. One thing I do want to comment on are expenses. We are finding in trying to explain to management what's really going on and get management to understand what the issues are, we have spent a lot of time breaking expenses into pieces. Here I show acquisition and maintenance. We have also spent a lot of time splitting both our expected and actual expenses between variable and fixed. For a lot of companies that have growing blocks of business and are looking at critical-mass-type issues, this is a significant piece of the puzzle.

TABLE 1

Sources of Net Income
(after tax)
LOB & Individual Annuity

	Month of	YTD
Budget Net Income	800	4,000
Variances to Budget		
Normal Profit	250	1,100
Liftoff	0	0
Mortality	0	0
Acquisition Expense	50	90
Maintenance Expense	-100	-500
Persistency	0	0
Total Variance to Budget	200	690
Net Income	1,000	4,690

We have typically used persistency as a balance item. It is a lot easier that way. John showed nice formulas for calculating persistency gain, but it is a lot easier to assume that it is just the balance, and if it's big, just try to figure out why.

I mentioned that in the 1980s our president was an actuary, recently the management system has had a lot more accountants involved in it. When they look at Table 2 and see all these zeros, they wonder what sources of earnings tells them. They want to see income statements.

So one thing we have done is given them a bastardized income statement that gives them some more information. This is basically on an FAS 97 basis (See Table 2).

Interest on target surplus is really interest on allocated surplus to the line -- the way we manage this is statutory reserves plus target surplus. This is the difference between GAAP net reserves and statutory reserves plus benchmark surplus. The table shows an annuity line, so the direct death benefit is zero. For our life business, we typically split out reinsurance here because that has been a significant issue.

Taxes, licenses, and fees are other sources that do not get a lot of attention. We have found that, especially with payments to guaranteed funds, taxes, licenses and fees has become a hot issue that really deserves being pointed out to management. I do not think a lot of us ever consider taxes, licenses and fees strongly when we looked at our pricing assumption. They have been the cause of a lot of volatility from assumptions.

Our definition of return on equity is very similar to what Paul mentioned. Return on assets, since we are looking at an annuity block, is a nice measure that we like to look at.

One of the problems that we see here is you see a lot of numbers and again, a lot of them are zeros. The question is, what does this tell me? What we have done is broken down each of the sources and tried to present exhibits that give our management a little bit of an idea of what is really going on. Table 3 is one type of exhibit. It breaks out interest spread on universal life business. I've shown the amount of the account balance we have, what we are earning, what we are crediting, and the amount of spread. We also identify in our reports what our expected spread is. We typically break it out into blocks of business, and those blocks vary over time. One of the things that I have found is that the important thing is to try to direct the people with whom you are trying to communicate to the issues that are important. You need to have flexibility to expand and contract the exhibits that you are giving them, to show them the information that is meaningful. As one example, when we see fluctuations in earned or credited rates, we might break out new blocks of business.

TABLE 2

Net Income
LOB: Individual Annuity

	Year to Date	
	Actual	Variance to Budget
Liftoff	9.0	1.5
Other Policyholder Charges	1.0	-0.4
Interest on Target Surplus	0.8	0.0
Total Revenue	10.8	1.1
Death Benefits	0.0	0.0
Acquisition Expenses	21.0	-5.1
Acquisition Expense Deferral	-21.0	5.1
Net	0.0	0.0
Amortization of Prior Deferral	3.0	-0.3
Maintenance Expenses	2.5	-0.1
Taxes, Licenses, and Fees	0.3	0.0
Total Benefits and Expenditures	5.8	-0.4
Pretax Income	5.0	0.7
FIT	1.7	-0.2
Net Income	3.3	0.5
Average Shareholder Equity	40.8	
R.O.E.	16.0%	
Average Assets	900.0	
R.O.A.	0.37%	

Table 4 shows the variance in mortality. We usually show twelve months worth of trend in order to give a picture of what is really going on. When we are looking at earnings monthly, you see a lot of fluctuations, because of this month's death claims. What we like to do is show pictures that show trends so that we can calm down the excitement when nobody happens to die that month. This is a good opportunity to use a graph, which we haven't done, because I like to see the numbers. But if you are dealing with less technical people, it is a nice opportunity to put a graph in and show the random fluctuation to see whether there's any trends or not.

TABLE 3

Universal Life Liftoff

	Unloaned Account Value	Earned Rate*	Credited Rate	Actual Liftoff	Required Liftoff*	Excess Liftoff
1st Generation UL	$50.0	9.40%	7.50%	190 b.p.	200 b.p.	(10) b.p.
2nd Generation UL	$150.0	9.10%	7.50%	160 b.p.	150 b.p.	10 b.p.
Current UL						
Prior to 1/1/89	$50.0	9.00%	7.50%	150 b.p.	140 b.p.	10 b.p.
1/1/89 - 12/31/90	60.0	8.90	7.50	140	140	0
1/1/91 - 12/31/91	40.0	7.70	6.50	120	140	(20)
1/1/92 - 6/30/92	25.0	7.30	6.00	130	140	(10)
Total Current UL	**$175.0**	**8.43%**	**7.06%**	**137 b.p.**	**140 b.p.**	**(3) b.p.**
UL Loans	$25.0	8.00%	6.00%	200 b.p.	152 b.p.	48 b.p.
Total Universal Life	**$400.0**	**8.77%**	**7.21%**	**156 b.p.**	**152 b.p**	**4 b.p.**

* Net of investment expenses

The other significant piece here is surrenders (see Table 5). We show lapse experience typically on a monthly basis, again showing trends and breaking out different blocks that we expect to have different experience on. We typically also show budget on this exhibit, so that management has a point of reference.

TABLE 4

Death Claims Per Thousand
LOB: Individual Life

Full Year 1992 Budget	Incurred Claims	Monthly April	May	June	YTD 1992
11,000	Traditional Life	600	800	1,000	5,300
18,000	Universal Life	1,100	1,400	700	7,500
1,000	Interest-Sensitive	100	0	0	100
30,000	Subtotal	1,800	2,200	1,700	12,900
(7,000)	Reinsurance	(200)	(300)	(200)	(2,500)
23,000	Total	1,600	1,900	1,500	10,400
	Face Amount (000s)				
5,000	Traditional Life	4,400	4,500	4,600	4,600
8,000	Universal Life	7,400	7,500	7,600	7,600
3,000	Interest-Sensitive	2,300	2,500	2,700	2,700
16,000	Subtotal	14,100	14,500	14,900	14,900
(4,000)	Reinsurance	(3,400)	(3,500)	(3,600)	(3,600)
12,000	Total	10,700	11,000	11,300	11,300
	Claims Per 1,000				
2.44	Traditional Life	1.66	2.16	2.64	2.47
2.40	Universal Life	1.80	2.26	1.11	2.05
0.44	Interest-Sensitive	0.55	0.00	0.00	0.10
2.11	Subtotal	1.55	1.85	1.39	1.88
2.00	Reinsurance	0.72	1.04	0.68	1.52
2.14	Total	1.82	2.10	1.61	2.00

TABLE 5

Surrenders

YTD C.V.	YTD Surrender	YTD %	Budget %	Surrenders to Cash Value	Monthly Results (Annualized) Oct	Nov	Dec
85,000	6,100	7.5	7.0	Universal Life	5.4%	5.8%	10.7%
45,000	3,000	6.0	7.5	Traditional Life	5.5	6.0	7.0
400,000	3,200	1.5	5.0	Fixed Annuity	1.0	1.0	2.1
175,000	6,400	4.6	5.0	Variable Annuity	6.3	4.2	10.0

I would like to close with one other comment related to communication. As actuaries we love numbers, lots of numbers. I like looking at numbers, but a lot of times we forget that the rest of management does not necessarily like looking at a lot of numbers. You need to keep in mind that you are trying to communicate to management what is going on and make sure that management is looking at the right things. You should not necessarily think of your role as financial reporting. You should start thinking about it as financial presentation. Think about the types of information you are giving these people. Think about the perspective from which the individual management people are coming, what they like to see, how they like to picture things. If they like graphs, give them graphs. I have watched a number of senior management members when they are shown a lot of numbers. Their eyes start rolling back into their heads, and they stop listening. You show them a graph, and they get all excited. With the technology we have, it is easy to graph things. I think a lot of us fall back into this trap. We would rather see a set of numbers, just as I showed the death claims per thousand. I would rather look at a stream of twelve numbers to see a trend. Most nonactuaries would rather see a nice graph to look at that trend. It is not real difficult to put these things together, and it is an effective way of presenting things.

UNDERSTANDING GAAP AND STATUTORY PROFITABILITY

MR. RANDALL L. BOUSHEK: By way of introduction, I am an actuary who is practicing in the rather nontraditional realm of the left-hand side of the balance sheet. I am an investment portfolio manager with Lutheran Brotherhood, a fraternal benefit society headquartered in Minneapolis with approximately $10 billion of total assets under management in insurance and mutual funds. Our insurance general account totals about $7.5 billion, of which roughly one-third is concentrated in mortgage-backed securities (MBSs), principally collateralized mortgage obligations (CMOs). I am responsible for managing this portfolio.

My assignment is to address certain investment income issues in the context of analyzing statutory and GAAP profitability. Specifically, I've been charged to focus on the potpourri of accounting guidelines and methodologies that control the emergence of investment income on MBSs, and the various patterns of incomes that can emerge. I'd like to follow a specific outline for my remarks. At the outset I want to make sure that we have a common understanding of MBS terminology. The MBS arena is complex and complicated, it can be confusing and intimidating, and it's replete with acronyms and terminology that are often misapplied and misunderstood. My initial goal is to ensure that terminology does not get in the way of the rest of the presentation. The second and third points on my outline, which will consume the majority of my time, include a discussion of the various GAAP and statutory accounting guidelines for MBSs and a review of the methodologies specified by those guidelines. Finally, I plan to close with a few comments on how the mechanics of the new interest maintenance reserve (IMR) will affect the pattern of statutory earnings that emerge for MBSs that are sold.

Why spend so much time focusing on this particular asset class? Well, apart from the fact that (1) MBSs generate a far more interesting and far more variable earnings stream than any other type of invested asset, and (2) in every session from this meeting I've been to there's been at least one speaker who has made a comment to the effect that CMOs are a problem. There

are at least five different reasons I can point to. First of all, in 1991 MBSs became the single largest new-money investment class for the life insurance industry (see Chart 1). Just over one-fourth of all new fixed-income investments made by life companies in 1991 were in some type of MBS. In 1992 that percentage will be higher. A recent survey by SEI indicated that over 70% of 170 respondents plan to further increase their new-money allocation to MBSs.

Second, within the past few months there has been at least one insurance company insolvency and more than one well-publicized insurance company capital write-down attributable to accounting adjustments on a specific subclass of MBSs known as interestonly (IO) investments.

Third, the interest-rate environment that we're operating in has spurred a tremendous avalanche of refinancings of individual mortgage loans. The consequence of this to investors is a surge in prepayments that has significantly altered the cash-flow stream and income patterns of many MBSs.

Fourth, in 1993 the NAIC will begin requiring additional statutory disclosure of CMOs. The first step of this process will be a separation of CMOs from other investments on Schedule D. Subsequent disclosure requirements will include information on the types of tranches owned and on the volatility characteristics of those tranches.

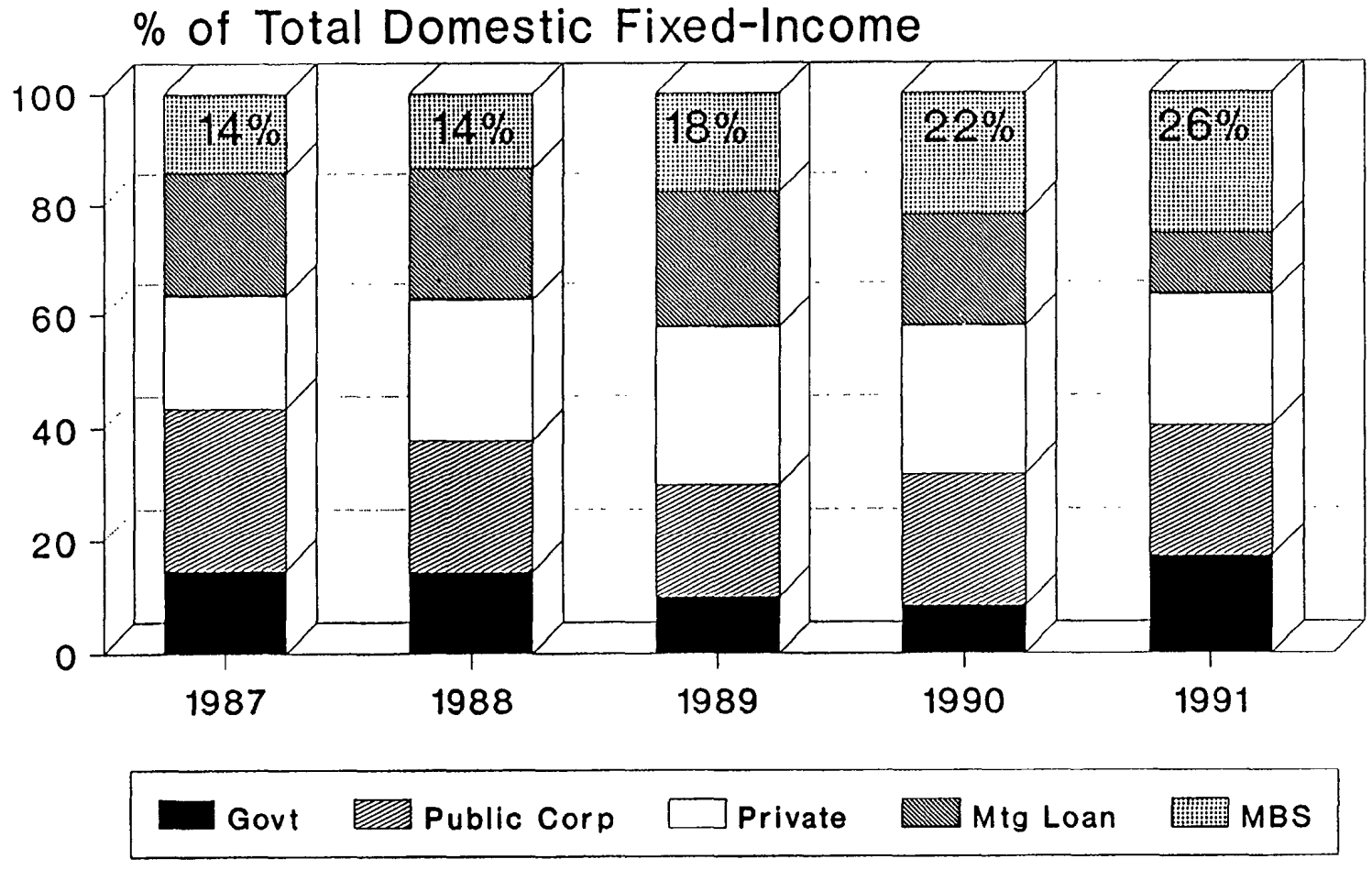
Finally, the subject of MBS accounting is presently a key focus point for both the NAIC and the FASB. Both organizations currently have task forces actively reviewing the current statutory and GAAP accounting guidelines, respectively, for MBSs.

Terminology

There are a number of different ways that we can categorize MSBs. One way is to classify them in terms of the general type or structure of the security. In the simplest form we have pass-throughs, which are aggregations of residential mortgage loans that are sold in straight pro-rata interests to investors. One step up from pass-throughs are IO and principal-only (PO) strips, which are aggregations of pass-throughs sliced "horizontally" to separate interest cash

CHART 1

LB MBS/CMO Presentation
New Investments -- All Life Companies



flows from principal cash flows. Each of these two slices are sold independently in straight pro-rata interests to investors. At the next step are CMOs, which are aggregations of pass-throughs sliced "vertically" into numerous tranches, enabling the principal and interest cash flows to be sold in non-pro-rata interests to investors. There are a great number of alternative tranche types, and it is beyond the scope of this presentation to review them in any detail. It should be noted, however, that it is possible to create PO and IO tranches within a CMO. Finally, emerging at the top of this pyramid is a new type of CMO which is an aggregation not of pass-throughs but of certain tranches from other CMOs.

A second way of classifying MBSs is by their tax or legal status. This is often a point of confusion. CMOs and nonagency pass-throughs can take one of three tax/legal forms: trust, special purpose corporation (SPC) or special purpose subsidiary (SPS), or real estate mortgage investment conduit (REMIC). Most early CMOs were issued in the form of a trust or a bankruptcy-remote SPS. Since 1986, most CMOs have been issued in the form of REMICs. It is important to understand that CMO and REMIC are not mutually exclusive terms. The term CMO refers to the structure of the security, while the term REMIC refers to the tax election made for the accounting and legal treatment of the security.

A third way of classifying MSBs is by the accounting treatment they receive. For purposes of this discussion, we can identify five distinct classes of MBSs that differ from one another in the accounting treatment prescribed for them under either statutory or GAAP guidelines: (1) securitized servicing rights, (2) residuals, (3) IOs and IOettes, (4) "high-risk nonequity CMOs," and (5) all other, which is by far the biggest class. For reference, "high-risk nonequity CMOs" are defined by the FASB to include all nonequity CMO instruments (and certain CMO instruments issued in the form of equity) that have potential for loss of a significant portion of the original investment due to changes in interest rates, prepayment rates, or earnings from the temporary reinvestment of cash collected by the CMO structure but not yet distributed to holders.

Accounting Guidelines

Let's begin by reviewing GAAP accounting guidelines (Table 1). There are indeed a potpourri of guidelines, a rather quilted patchwork that's been put in place over time. The Emerging Issues Task Force (EITF) Abstract 86-38 specifies the accounting treatment for purchased mortgage servicing rights. EITF Abstract 89-4 includes the definition of "high-risk nonequity CMO investments" and provides accounting guidelines for these securities, specifically including residuals and IO investments. FAS 91, which chronologically falls between these two abstracts, essentially covers all other MSBs or mortgage-type instruments that are subject to reasonable estimable prepayments. Interestingly, FAS 91 is an optional treatment at the election of the investor.

TABLE 1

Applicable Accounting Guidelines
GAAP

Guideline	Applies to	Prepayment Assumption	Methodology
EITF 86-38	Excess Service Fees	Required	Composite
EITF 86-38	Purchased Meeting Service	Required	Prospective
EITF 89-4	IOs & HRNE CMOs	Required	Prospective
FASB 91	Other MBS - fixed Other MBS - adjust	Optional Optional	Retrospective Prospective
Exposure Draft	All MBS	Required	Retrospective

In the fall of 1991, FASB issued an Exposure Draft entitled "Accounting for Investments with Prepayment Risk." The goal of this proposal was to replace the disparate guidelines listed in Table 1 with a single standard guideline that would apply on a mandatory basis to all MBSs. The discussion draft generated significant debate within the accounting profession. In response, portions of the draft were withdrawn earlier this year, and then in July 1992, FASB withdrew the entire proposal. Portions of the proposal have been subsumed under the broader FASB

project on present-value-based measurements. For the time being, however, the existing guidelines are still applicable.

Statutory accounting guidelines are somewhat less clear (Table 2). The NAIC Life and Health Accounting Practices Handbook does specify the accounting treatment to be used for "IO certificates" and "CMO residuals." By inference, the handbook also addresses discount accrual and premium amortization for Government National Mortgage Association (GNMA) pass-throughs. Beyond this, however, the handbook is conspicuously silent on accounting for other MBSs. This issue has been raised to the NAIC Working Group on Emerging Issues, which has now deferred to the Invested Assets Working Group of the NAIC's Valuation of Securities Task Force for development of more detailed guidelines (see minutes from the EI 91-4 meeting).

TABLE 2

Applicable Accounting Guidelines

		STATUTORY	
Guideline	Applies to	Prepayment Assumption	Methodology
NAIC Accounting Practices Handbook	IOs	Required	Retrospective
	Residuals	Required	Prospective
	Other MBS	????	????

Now, the accounting guidelines essentially specify two things: (1) whether or not prepayments are to be taken into consideration in amortizing purchase discount or premium, and (2) the methodology to be employed in doing so. You can see from Table 1 that there are at least three different methodologies specified under the GAAP guidelines, each of which we'll review in more detail. You'll note also that, under FAS 91, fixed- rate MBSs are treated differently than adjustable-rate MBSs. Finally, you can see that the now withdrawn exposure draft would have made prepayment assumptions mandatory and would have specified the use of the

Retrospective Accounting Method. It was this last provision of the exposure draft that drew the most comment and concern, and as we discuss the retrospective methodology I think the reasons will become apparent.

On the statutory side (Table 2), I would ask you to note the methodologies specified for residuals and IOs. The methodology specified for residuals (Prospective Method) is the same as that specified under GAAP. However, the methodology specified for IOs (essentially the Retrospective Method) differs from that specified under GAAP. Also, as I noted before, there is little statutory guidance on other than these two specific MBS classes. As you might expect, company practices thus vary widely. In addition to the three defined methodologies that I have listed, options include carrying all discounted securities at unamortized cost, amortizing premiums and discounts over defined horizons (e.g., five years, the stated final maturity date of the investment, or an expected average life), and amortizing premiums and discounts on the basis of some alternative type of level yield method that incorporates a prepayment assumption.

Accounting Methodologies

Let's move on to a review of the methodologies themselves. As a preface, in all cases "investment income" in any period is defined as the "effective yield" times the carrying value (book value) at the beginning of the period, plus any "special adjustments." In any given period, the amount of premium amortized or discount accrued into the carrying value is the difference between "investment income" and interest received. At the time of purchase, the effective yield is initially the internal rate of return (IRR) that equates the purchase price to the present value of the future cash flows at some assumed prepayment speed. It is the recalculation of effective yield in future periods, as well as the inclusion of "special adjustments," that distinguishes one method from another.

Because of the prepayment uncertainty associated with MBSs, it is extremely unlikely that the then expected remaining cash flows at some future date will match the cash flows initially expected to be remaining as of that date. This is true even if the prepayment assumption has not changed, owing to the fact that actual prepayments to that point are not likely to match

exactly the initial assumption. Under the Prospective Method, on each reporting date a new effective yield is calculated by solving for the IRR that equates the then current carrying value with the present value of the then remaining expected future cash flows at a then appropriate prepayment assumption (which may or may not differ from the initial assumption). This new effective yield is then applied in the next reporting period. If, however, the new effective yield is calculated to be less than zero (i.e., the current carrying value is greater than the undiscounted sum of the expected remaining future cash flows), the effective yield is set to zero, and a special adjustment is made to decrease the carrying value to the undiscounted sum of the expected remaining future cash flows. As I indicated, this special adjustment flows through investment income, not the capital gain/loss account.

Under the Prospective Method, the impact of actual-to-expected prepayment variances are deferred into the future by prospectively adjusting the accrual/amortization schedule through a revised effective yield, unless the variance is sufficiently adverse enough to induce a negative effective yield. A negative effective yield could only emerge for securities bought at a premium to par, and for IOs.

The Composite Method is identical to the Prospective Method, with one important difference. Instead of setting a floor of zero on the effective yield, the Composite Method sets a floor equal to the initial effective yield. Negative variances thus more quickly trigger special adjustments to carrying value, and such adjustments may occur for both securities bought at a premium and securities bought at a discount.

The Retrospective Method is a little more difficult to explain and a lot more difficult to administer. Under the Retrospective Method, as under the other two methods, a new series of remaining cash flows is projected at the end of each reporting period and a new effective yield is calculated. However, unlike the other two methods, the effective yield is recalculated as of the purchase date, using a single stream of cash flows that reflects actual prepayments prior to the reporting date and projected prepayments thereafter. This effective yield is then used to re-amortize/accrue all premium/discount from the purchase date forward. Once this is done,

the current carrying value must then be adjusted to the newly recalculated carrying value. Significantly, this adjustment may reflect either adverse or beneficial prepayment variance.

Under the Retrospective Method, prepayment variances of all types are reflected more immediately in the carrying value of the security, as well as through a revised effective yield. Since all adjustments to carrying value flow through investment income, this method also leads to greater volatility in the reported income stream. In addition, the Retrospective Method requires the retention of a significant amount of historical accounting data and the continual rebuilding of accrual/amortization schedules. It is these last two points that presented so much difficulty for many of the respondents to the FASB exposure draft.

It is difficult to generalize about the income patterns that can emerge under the various guidelines and methodologies. There are several determinants that must be considered for a given MBS. How prepayment sensitive is the specific security? Which financial statement are we considering, statutory or GAAP? Is a prepayment assumption being used? How much of a premium or discount was paid? How much of the premium/ discount has been amortized/accrued to date? How much have prepayments varied to date? How much has the prepayment assumption changed? Has the security begun returning principal yet? Suffice it to say that possibilities are numerous and the potential variances significant.

Statutory Accounting for MBS Sales

I'd like to close with a look at the impact of the new IMR on statutory accounting for MBS sales. First, I'm sure many of you are aware that gains/losses on the sale of GNMA pass-throughs are eligible for partial exclusion from the IMR in 1992 and 1993. In 1992, 50% of such gains/losses may be taken directly to surplus; in 1993 the percentage drops to 25%, and in 1994 the exclusion is phased out completely.

More interesting is the future amortization of MBS gains/losses that are taken through the IMR. For any residential mortgage pass-through, or any nonresidential, non-REMIC pass-through, an IMR gain/loss is amortized over one-half the time to the remaining final scheduled maturity

of the instrument. In today's interest-rate environment, this half-life is generally much longer than the expected average life of the security. For all other MBSs, an IMR gain/loss is amortized over the remaining time to the original expected average life of the security. For securities purchased at issue, this is the average life specified in the prospectus. For securities acquired after issue, this is the average life based on the prepayment speed used to calculate the initial effective yield. Again, in today's interest rate environment this initial expected average life is often much longer than the current expected average life. For certain securities that have suffered adverse prepayments, particularly IOs, these IMR amortization rules should be evaluated against the accounting adjustments mandated by the retrospective method to determine whether sale or retention has a more immediate impact on surplus.

UNDERSTANDING GAAP AND STATUTORY PROFITABILITY

MR. JOHN W. BRUMBACH: Let's start out with a cash-flow statement on a typical life insurance product:

Cash Flow	=	Gross premium
	+	Investment income
	-	Death benefits
	-	Surrender benefits
	-	Expenses

By itself, it shows the components or sources of cash flow, but provides no guidance on how results compare to assumed experience. A separate projection would be required for this purpose.

Chart 1 shows how cash flow emerges on a typical universal life product: negative in year 1 as expenses (including commissions) exceed premium, followed by several years of positive cash flow, then by many years of negative cash flow as benefit payments predominate.

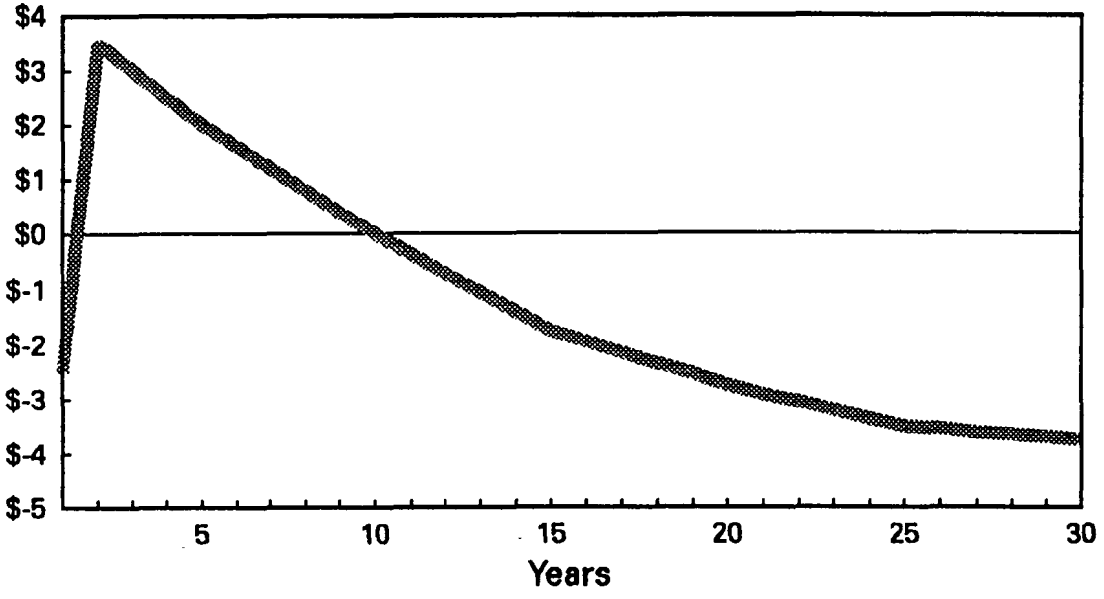
GAAP alters these "cash flow" earnings by use of a reserve mechanism. All GAAP models require assumptions about the future and, as experience unfolds, the only certainty we have is that actual results will differ from expected. Hence, the need for source-of-earnings analysis.

Let's focus on some GAAP accounting models: FAS 60, long-duration contracts with coterminous premium and benefit periods; and, for FAS 97, limited-pay, investment, and universal-life-type contracts. This pretty much covers the gamut except for short-duration contracts under FAS 60.

A primary objective of FAS 60 is to have earnings emerge in proportion to the performance under the contract. For contracts with coterminous premium and benefit periods, premiums have been judged to be a reasonable indicator of such performance. Benefits and expenses are matched to premiums by means of a net level premium reserve mechanism. However,

CHART 1

Cash-Flow Emergence
Sample Universal Life



the assumptions used contain provisions for adverse deviation, which as we shall see, cause some earnings to emerge other than in proportion to premium. Also, certain acquisition expenses do not meet the test for deferral -- that is, both vary with and are primarily related to the production of new business -- and these must be charged to earnings as incurred.

These are the major components of the FAS 60 income statement:

Earnings	=	Gross premium
	+	Investment income
	-	Death benefits
	-	Surrender benefits
	-	Increase in reserve
	-	Expenses
	+	Increase in DAC

The items are the same as the cash-flow statement, except for the addition of "increase in reserves" and "increase in deferred acquisition costs (DAC)."

Now, if these two items are broken down into their elements -- that is, net premiums, assumed interest, and assumed benefits and expenses -- it is possible to rearrange the income statement into a source-of-earnings format.

For purposes of this development, let's define "net reserve" as the reserve(s) for benefits and maintenance expenses less the DAC asset.

The resulting earnings by source consist of a gain from loading, and gains from interest, mortality, withdrawal and expenses. This is the classic development described in Richard Horn's landmark 1971 *Transactions* paper entitled, "Life Insurance Earnings and the Release from Risk Policy Reserve System."

The gain from loading consists of the gross premium less the sum of net premiums for acquisition expenses, benefits, and maintenance expenses. By definition, it emerges as a level percent of premium.

The gain from interest consists of actual interest earned on the beginning net reserve plus actual cash flow, less the assumed interest earned on the beginning net reserve plus assumed cash flow.

The gain from mortality consists of the difference between assumed and actual mortality times the net amount at risk, where net amount at risk equals the death benefit payable less the net reserve.

The gain from withdrawal is similar in that it equals the difference between assumed and actual withdrawal times the difference between the cash-value payable and the net reserve.

Last, there is the gain from expenses, which simply equals the difference between assumed and actual expenses. Any nondeferrable expenses would be included in actual, but not assumed, expenses, producing a charge to current earnings.

As mentioned earlier, the GAAP assumptions under FAS 60 include provisions for adverse deviation, that is, margins for future experience that is worse than expected. For example, the mortality assumption may be set at 110% of expected, the additional 10% being a provision for adverse deviation. The difference between actual and assumed experience, thus, can be viewed as consisting of two parts: the difference between assumed and expected experience (i.e., the provision for adverse deviation), and the difference between actual and expected experience.

Using these parts, we see that earnings emerge as a level percent of premium, plus the release of provisions for adverse deviation, plus or minus any differences between actual and expected experience, less any nondeferrable acquisition expenses.

Chart 2 shows graphically how FAS 60 earnings would emerge on a whole life product, if actual experience were to equal expected. Were it not for provisions for adverse deviation and nondeferrable expenses, earnings would emerge as a level percent of premium. Instead, the earnings percentage typically is close to break-even or negative in the first year due to nondeferrable expenses, and then grows in the future as provisions for adverse deviation are released.

Moving on to limited-pay contracts under FAS 97, everything is the same as under FAS 60 except the gain from loading. The percent-of-premium loading is spread in proportion to insurance in force on life contracts and benefit payments on annuity contracts.

Earnings on limited-pay life contracts, therefore, emerge as a level percent of insurance in force, plus release of provisions for adverse deviation, plus or minus any differences between actual and expected experience, less any nondeferrable acquisition expenses.

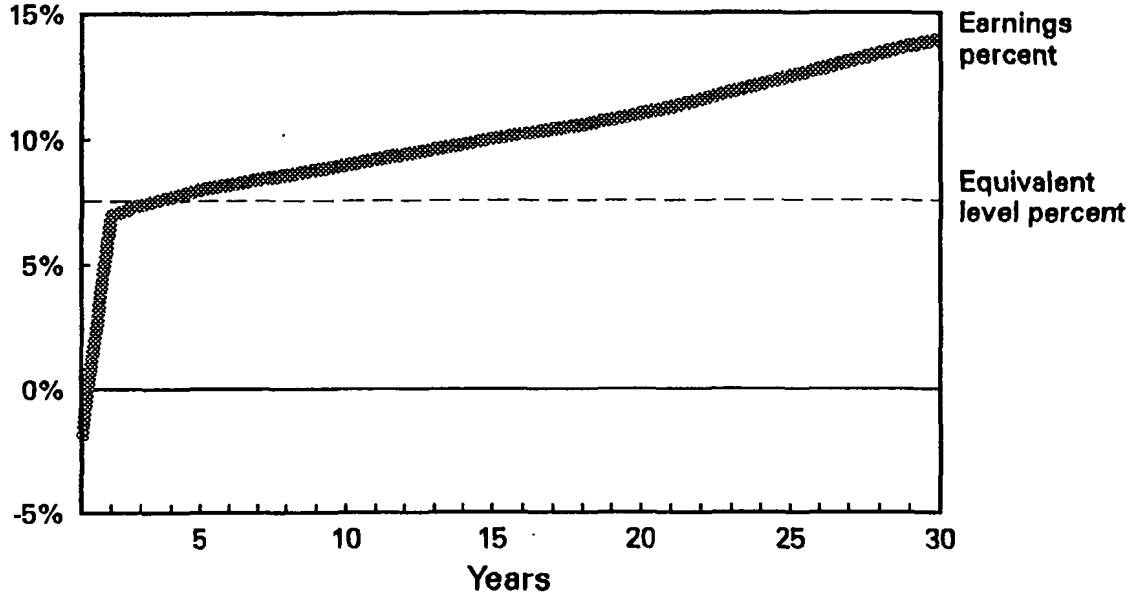
On investment contracts under FAS 97, two methods appear to be used in practice: the prospective deposit method on contracts with fixed and determinable benefits, and the retrospective deposit method on contracts having flexible benefits with an account balance.

Let's consider an annuity-certain contract under the prospective deposit method. A break-even interest rate is determined such that the present value of future benefits and maintenance expenses equates to an amount equal to the single premium paid less deferrable acquisition expenses. The unitary net reserve at any future time would be the present value of future benefits and maintenance expenses determined at this break-even interest rate. The reserve is then split between a benefit reserve and DAC for purposes of the balance sheet.

The retrospective deposit method is similar to that on universal-life-type contracts.

CHART 2

FAS 60 Earnings as Percent of Premium
Sample Whole Life Product



The income statement on investment contracts is different from that under FAS 60. Take, for example, the income statement on the annuity certain contract:

Earnings	=	Investment income
	-	Required interest
	-	Expenses
	+	Increase in DAC

The increase in benefit reserves is already distributed by component, and all that's left to do for source-of-earnings analysis is to split the increase in DAC into assumed interest and expense components.

Once the increase in DAC is split, the income statement can be rearranged by source of earnings, which, for this product, equal gains from interest and expense.

Earnings on the annuity certain contract emerge as a level percent of interest (i.e., the spread between the earned rate and the break-even rate) on the net reserve, plus or minus any differences in actual versus expected experience, less any nondeferrable acquisition expenses.

Moving on to FAS 97 on universal-life-type contracts, the liability for policy benefits consists of the account balance, plus certain other items that may have application, depending on the particular contract (e.g., unearned revenue reserve, reserve for refundable amounts, and premium deficiency, if any).

DAC is amortized in proportion to estimated gross profits, using a discount rate equal to the contract credited rate rather than the rate earned by the company. Let's say that k% of estimated gross profits are needed to amortize DAC.

FAS 97 defines estimated gross profits to be certain gains from interest, mortality, withdrawal and expense, determined using best-estimate assumptions.

Specifically, estimated gross profits equal the difference between interest earned and credited, plus the difference between COI charges and death claim costs, plus surrender charges, plus the difference between expense charges and maintenance expenses.

The income statement is similar to that on investment contracts, in that the increase in reserves is already distributed by component:

Earnings	=	Earned COI, expense, surrender charges
	+	Investment income
	-	Death claim costs
	-	Interest credited
	-	Expenses
	+	Increase in DAC

Earned COI, expense and surrender charges are revenue items. Death claim costs represent the amount of death benefits paid in excess of reserves released, and interest credited represents amounts accruing to policyholder account balances.

Now let's look at earnings by source:

Earnings	-	(1 - k%) • Estimated gross profits
	-	Adjustment for DAC discount rate
	+	Δ Gain from interest
	+	Δ Gain from mortality
	+	Δ Gain from withdrawal
	+	Δ Gain from expenses

Remember that k% of estimated gross profits are needed to amortize DAC. The remainder (1-k%) flows to earnings. Another item that affects earnings is caused by having DAC based on the credited rate rather than the company earned rate. This tends to defer some earnings to the later years. Last, earnings are affected by any differences between actual and assumed gains in interest, mortality, withdrawal and expense.

Earnings emerge as a level percent of estimated gross profits, less the DAC interest rate adjustment, plus or minus any differences between actual and expected experience, less any nondeferrable acquisition expenses.

Chart 3 graphically shows how earnings would emerge on a universal life product if actual experience were to equal expected. Were it not for nondeferrable expenses and the DAC interest-rate adjustment, earnings would emerge as a level percent of estimated gross profits.

Unlike under FAS 60, unlocking is required under FAS 97 on universal-life-type contracts. Estimated gross profits must be revised whenever actual experience differs significantly from assumed experience. New DAC schedules must be developed from issue, and a cumulative catch-up adjustment made in the current period. Any such adjustment becomes an additional item in the earnings-by-source analysis. Also, analyses for future periods would be based on the revised estimated gross profits and DAC.

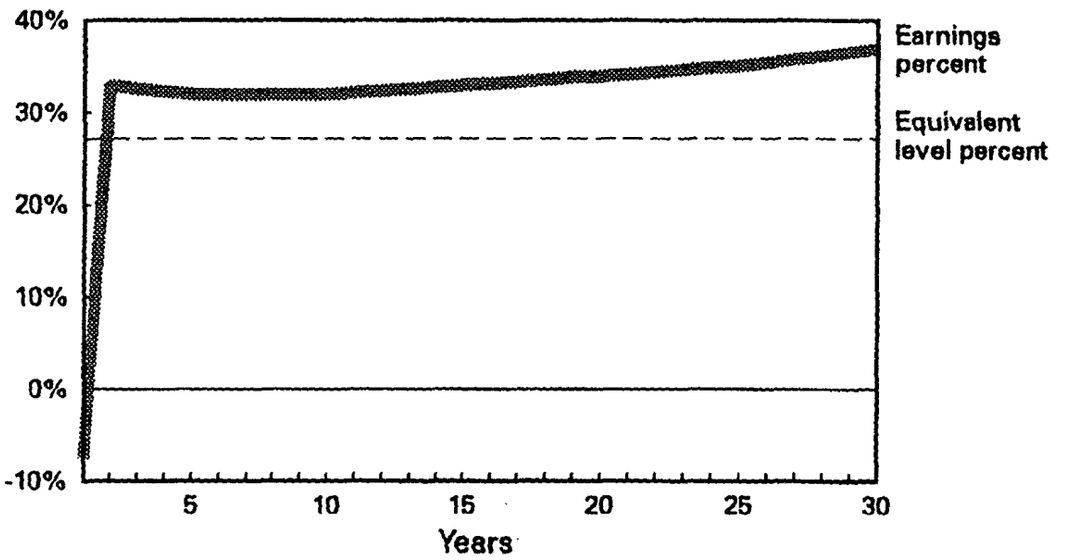
Some general items to consider in GAAP source-of-earnings analysis include the allocation of investment income and expenses, and the treatment of reinsurance.

With respect to investment income, actual amounts should be allocated on the basis of net reserves (i.e., reserves less DAC), for earnings to emerge as previously described. Any remaining amount of investment income should be separately identified and treated as interest on GAAP surplus or target surplus. To do otherwise can produce misleading results. For example, if investment income is allocated on the basis of reserves, gross of DAC, reported earnings beyond year one, on an FAS 60 product, could very well exceed 20% of premium, even though the inherent profit margin on the product may only be 5%.

Expenses in the income statement typically are not split among acquisition, maintenance and overhead. It will be necessary to estimate these parts, and then further divide acquisition expenses between those that are and are not deferrable. Overhead expenses should be excluded

CHART 3

FAS 97 Earnings as Percent of EGP
Sample Universal Life Product



from the product line analysis or, at least, separately identified, since such expenses cannot be taken into account in the development of GAAP reserves or DAC.

Last, reinsurance may have a significant impact on earnings, and should be taken into account in the source-of-earnings analysis, if material. For example, on YRT reinsurance ceded, net claim costs (YRT premiums net of allowances and claim recoveries) could be analyzed by source, and netted against those on direct business. On coinsurance ceded, where a quota-share reserve credit is taken and a contra-DAC established for reinsurance allowances received, the various components of gain or loss could be determined on the coinsurance and netted against those on the direct business.

Effects of reinsurance should also be tracked separately to keep an eye on reinsurance costs.

UNDERSTANDING GAAP AND STATUTORY PROFITABILITY

MR. PAUL S. GRAHAM III: People are always talking about the good old days -- a time when things were simpler and there wasn't such a rush to get everywhere, even in New York City. To hear our grandparents tell it, everybody walked five miles in snowstorms to get to school. Well, the life insurance industry had its good old days, too. Products were extremely profitable. Mortality improvements came with leaps and bounds. You could count on most policies persisting until the death of the insured. Interest rates stayed in relatively narrow ranges. Jordan was more than just a country in the Middle East. And insurers only had to deal with one set of accounting standards, which were prescribed by regulatory authorities. Given the stable environment, statutory financial reporting, which was designed with solvency regulation in mind, was an adequate indicator of an insurer's financial condition.

Although stock life insurers were first required to prepare additional financial statements based on GAAP in the early 1970s, few, if any, mutual companies had any inclination to do so. Then, with all the subtlety of a Concorde jet, came the 1980s. Mortality improvements slowed down or even disappeared. Universal life, with its high credited interest rates, became the rage, and cannibalized many long-held traditional policies. Interest rates went through the roof, creating opportunities for arbitrage. The push for more competitive products led insurers into the risky junk-bond and commercialmortgage markets in order to maintain their profit margins. Inflation of fixed expenses, in many cases, exceeded the growth of in-force business, resulting in rapidly increasing unit costs. And, suddenly, the number of actuarial examinations tripled. What in the world was going on?

It became clear that annual financial results were taking on more importance in a company's ability to manage its business. But statutory reporting really was never designed to monitor year-by-year results. Surplus is the driving force behind statutory accounting, and the gain from operations is simply the balancing item between year-end surplus amounts. Unfortunately, the by-product is financial signals that are often misleading. For example, adding profitable

business to the books will, in general, reduce earnings in the year of the sale. A lapsing policy can actually increase the gain from operations in the year of termination. And equity investments produce lower levels of current investment income than fixed-income investments. None of these examples produce the desirable financial results in a year-by-year analysis of earnings.

As all of you expected, this is where GAAP comes into the picture. As it turns out, the financial results produced by following GAAP are good for more than just satisfying SEC regulations. GAAP can provide extremely useful management information, as well as the proper financial signals upon the occurrence of most events. Because acquisition expenses are amortized, the sale of a profitable policy will result in profits in the year of issue. The cost of a lapsing policy is more accurately reflected, since the remaining unamortized deferred acquisition costs are expensed in the year of lapse. Equity investments and capital gains can be treated in more meaningful ways. Any analysis of gains by source is significantly more useful. And one thing that we shouldn't forget is that GAAP financials are more easily understood by most members of boards of directors, as well as some members of senior management.

Knowing all of these advantages, as well as the disadvantages of statutory accounting, our company took the plunge into using GAAP-like accounting for management reporting purposes beginning in 1988. I say GAAP-like because as a mutual company, although we followed the spirit of GAAP rules, we were not bound to their strict interpretation.

Since the majority of our business is traditional individual participating life insurance, we focused our efforts on complying, in spirit, with FAS 60. As I'm sure most of you know, the premise behind FAS 60 is that expected book profits emerge as a level percent of premium income, and our GAAP-like method is no different. But differences do exist. For example, strict adherence to FAS 60 requires each assumption to include a provision for adverse deviation. However, since we are interested in comparing actual performance relative to a set of pricing assumptions, our GAAP reserves were developed using those pricing assumptions,

which do not include any explicit margins. As a mutual company, we know that, should adverse experience develop, we can, to the extent that we believe that it will continue in the future, reduce dividends to maintain a level of profitability comparable to that assumed in the original pricing.

A second difference from standard GAAP accounting rules concerns the definition of deferrable expenses. We have made the assumption that all expenses are potentially deferrable. As you know, that is not true in a strict interpretation of FAS 60.

Another major deviation from FAS 60 is our use of dynamic assumptions. That is, we change our prospective assumptions whenever a major dividend scale change is made. The current reserve is frozen, and a new net premium is calculated that is sufficient, when combined with the current reserve, to pay for the future benefits and expenses using the assumptions underlying the new dividend scale. Once again, this allows us to compare actual performance with pricing assumptions, where the pricing assumptions are really those used in setting the new dividend scale. FAS 60, on the other hand, requires assumptions to be locked in at issue, with no subsequent changes unless a gross-premium-type valuation shows the current reserves to be inadequate, upon which the reserves are immediately increased to an adequate level and the reserve change is charged to the GAAP gain from operations. Our method allows the current reserves on small groups of policies to be less than their natural reserves, and hence the net premiums for those policies can exceed the gross. Our reasoning was that future dividends can be reduced to account for continued expected losses on any particular group of policies.

Another liberalization to the strict adherence of FAS 60 is the use of mapping. The GAAP reserves of policies that are representative of certain minor policy types are used in place of the "true" GAAP reserves for those minor plans. In addition, some older policies with relatively small in-force amounts use statutory reserves as a surrogate for their GAAP reserves. We felt that this would be more appropriate than, say, mapping an endowment, at-age-65 policy to a whole-life policy.

As of yet, I have not mentioned anything about our accounting method for single premium deferred annuities (SPDAs), variable universal life, or variable annuities. These types of policies would normally fall under the auspices of FAS 97. We have chosen to stray from the prescribed GAAP accounting rules for these products, and instead have developed GAAP reserves that will produce a level return on equity if the GAAP assumptions are realized. Once again, relating performance to pricing is our primary emphasis. We are concerned that FAS 97, with its continuously changing expense amortization schedule, could cause financial signals that are difficult to comprehend on policies that have highly volatile investment returns.

FAS 97 also prescribes GAAP accounting methodology for universal life. Since we, historically, have had an extremely small amount of universal life in force, we have been using statutory reserves for our universal life business. As a result of our merger with Home Life, which had a much larger block of universal life policies, we are in the process of revisiting FAS 97, and I suspect that we will begin using GAAP for universal life beginning in 1993.

One of the critical limitations facing us when we designed our GAAP methodology was the adaptability of our statutory valuation system. Since we were voluntarily adopting GAAP as our accounting method of choice for management reporting, we did not want to bear the expense of reinventing an entire valuation system. Hence, we were forced to live with some limitations, at least for now, to the types of policies we could GAAP. For instance, we must continue to value our paid-up policies and paid-up additions on a statutory basis, although we will GAAP them at the first opportunity. In addition, we have chosen, due to their immateriality, to continue to value riders on a statutory basis as well.

Now it's time for the nuts and bolts part of my presentation. That is, how do we communicate the results to management? Communicating the results is a two-step process, the first being the presentation of the gains and the second being analysis of those gains. Our internal financial reporting format is designed to do both. I'd like to allude to some of the more important items in the report (Table 1).

TABLE 1

Sample Supplemental Schedule Page

Supplemental Schedules (in $thousands)	Current Month	Year to Date 1992 Actual	1992 Plan	Variance (Unfav.)	1991 Actual
Schedule A - Premiums					
New	5,000	45,000	42,000	3,000	41,000
Renewal	60,000	500,000	480,000	20,000	440,000
Single	1,000	5,000	6,000	(1,000)	5,000
Total Premiums	66,000	550,000	528,000	22,000	486,000
Schedule B - Guaranteed Benefits					
Death Benefits Paid	7,000	63,000	66,500	3,500	59,500
Surrender Benefits Paid	13,000	117,000	123,500	6,500	110,500
Other Benefits	1,000	9,000	9,500	500	8,500
Change in GAAP Reserve	5,000	45,000	47,500	2,500	42,500
Tabular Interest	(3,000)	(27,000)	(28,500)	(1,500)	(25,500)
Required Gain from Ancillary Sources	(1,500)	(13,500)	(14,300)	(800)	(12,800)
Excess Gain from Ancillary Sources	(200)	(1,800)	(1,900)	(100)	(1,700)
Total Guaranteed Benefits	21,300	191,700	202,300	10,600	181,000
Schedule C - Commissions					
New	2,500	22,500	21,000	1,500	20,500
Renewal	2,400	20,000	19,200	800	17,600
Change in GAAP Reserve	(2,200)	(20,300)	(18,900)	(1,400)	(18,500)
Tabular Interest	4,400	40,600	37,800	2,800	37,000
Total Commissions	7,100	62,800	59,100	3,700	56,600
Schedule D - Premium Tax & Other Expenses					
Premium Tax Paid	800	11,000	8,000	3,000	6,100
Other Expenses Paid	13,200	110,000	90,000	20,000	61,000
Change in GAAP Reserve	(1,000)	(8,400)	(8,300)	(100)	(7,300)
Tabular Interest	5,000	44,500	41,600	2,900	40,600
Total Premium Tax & Other Expenses	18,000	157,100	131,300	25,800	100,400
Schedule E - Policyholder Dividends					
Dividends Incurred	14,400	115,000	120,100	(5,100)	110,000
Change in GAAP Reserve	8,600	69,000	72,100	(3,100)	64,300
Tabular Interest	(7,700)	(66,200)	(64,900)	(1,300)	(57,900)
Total Policyholder Dividends	15,300	117,800	127,300	(9,500)	116,400
Schedule F - Interest on Individual Surplus					
Net Investment Income	3,500	30,000	29,000	1,000	21,000
Less Tabular Interest -					
Schedule B - Guaranteed Benefits	(3,000)	(27,000)	(28,500)	1,500	(25,500)
Schedule C - Commissions	4,400	40,600	37,800	2,800	37,000
Schedule D - Premium Tax & Other Expenses	5,000	44,500	41,600	2,900	40,600
Schedule E - Policyholder Dividends	(7,700)	(66,200)	(64,900)	(1,300)	(57,900)
Total Interest on Surplus	2,200	21,900	15,000	6,900	15,200

The supplemental schedule page contains six schedules showing an analysis of premium, guaranteed benefits, commissions, premium taxes and other expenses, dividends, and investment income. As you can see, each of the four cost-type categories contains a change in GAAP reserve component. These reserves have been developed so that each of these costs emerge as a level percent of premium during the premium paying periods of the policies. This leads to some useful analysis. I'd like to point out a couple of peculiarities within these schedules. The first is in the guaranteed benefit schedule. Gains from ancillary sources, which are riders, supplementary contracts and the like, are included as an offset to guaranteed benefits in the development of the reserves. The amount assumed in developing the reserve is shown as required gains, and any additional amounts, or shortfalls for that matter, are shown in the line for excess gains from ancillary sources. The other point of information concerns the investment income schedule. You'll notice that it includes the interest credited to the GAAP reserves in each of the four cost schedules shown above. The main purpose of this schedule is to calculate the interest on surplus, which is the balancing item between the total investment income and the amount allocated to the reserves.

Table 2 is a sample of our GAAP format for the summary of operations. The top portion simply shows the calculation of before tax GAAP gain from operations, with the cost and income items footing to those shown on the previously shown supplemental schedule page. The middle section shows the calculation of return on GAAP equity for the individual traditional policies and the calculation on before-dividend GAAP gain. We'll return to this rather unique concept in a little while. In the meantime, I'd like you to focus your attention on the ratio analysis shown on the bottom of this page. As I mentioned earlier, each of the four types of costs will emerge as a level percentage of premium if all the pricing assumptions are realized. It follows that useful management information can be garnered by monitoring and tracking the ratios of the costs to the premium. That is exactly what this section does. These ratios provide management with a trend analysis that can be more useful than a simple dollar comparison of actual results against a financial plan. Since a plan is developed with an assumption of a specific level of new sales, any deviation from the expected sales plan can make the differences

TABLE 2

Sample Summary of Operations

SUMMARY OF OPERATIONS	Current Month	Year to Date 1992 Actual	1992 Plan	Variance (Unfav.)	1991 Actual
Premiums (A)	66,000	550,000	528,000	22,000	486,000
Guaranteed Benefits (B)	21,300	191,700	202,300	(10,600)	181,000
Commissions (C)	7,100	62,800	59,100	3,700	56,600
Premium Taxes & Other Expenses (D)	18,000	157,100	131,300	25,800	100,400
Policyholder Dividends (E)	15,300	117,800	127,300	(9,500)	116,400
Underwriting Expenses	61,700	529,400	520,000	9,400	454,400
Book Income (Loss)	4,300	20,600	8,000	12,600	31,600
Interest on Surplus (F)	2,200	21,900	15,000	6,900	15,200
Adjusted GFO - Before FIT & After Dividends Traditional & Other Sources	6,500	42,500	23,000	19,500	46,800
GAAP Equity:					
- Designated for Dividends		850,000	840,000		750,000
- Undesignated		800,000	780,000		740,000
Total GAAP Equity		1,650,000	1,620,000		1,490,000
Return on GAAP Equity (Before Div & FIT)		13.6%	12.8%		14.4%
RECONCILIATION					
Adjusted GFO - Before FIT & After Div	6,500	42,500	23,000	19,500	46,800
Add: Policyholder Divdidends	14,400	115,000	120,100	(5,100)	110,000
Add: Tabular Interest on PH Dividends	7,700	66,200	64,900	1,300	57,900
Adjusted GFO - Before Dividends & FIT	28,600	223,700	208,000	15,700	214,700
RATIO ANALYSIS (% of Premium)					
Guaranteed Benefits (B)		34.9%	38.3%		37.2%
Commissions (C)		11.4%	11.2%		11.6%
Premium Taxes & Other Expenses (D)		28.6%	24.9%		20.7%
Policyholder Dividends (E)		21.4%	24.1%		24.0%
Underwriting Expenses		96.3%	98.5%		93.5%
Book Income (Loss)		3.7%	1.5%		6.5%
Interest on Surplus (F)		4.0%	2.8%		3.1%
Adjusted GFO - Before FIT & After Dividends Traditional & Other Sources		7.7%	4.4%		9.6%

between actual and planned results extremely difficult for management to interpret. The ratios of cost to premium provide for a relative measure that is reasonably unaffected by the level of new business.

The ratio analysis is one important tool in helping to communicate the financial results to management. But the quality of the information pales in comparison to the information that can be derived from a gains-by-source, or as some call it, a source-of-earnings, analysis. Table 3 is our presentation of a gains-by-source analysis.

The analysis equates the difference between expected GAAP gain, once again based on pricing assumptions, and actual GAAP gain, with the gains and losses from seven possible sources: mortality, lapse, expenses, dividends, auxiliary sources, investment income, and all other, which encompasses items such as gains from mapping. I won't go into any further detail, but suffice it to say that a gains-by-source analysis is the single most impressive method of illustrating the source of your company's GAAP gains and losses.

Table 4 is the adjusted gains from operations summary.

It is here that gains from nontraditional individual lines, such as universal life and variable universal life, are added to the GAAP gains for the traditional products. As I mentioned before, the gains for universal life are statutory. Notice that the gain for the traditional products is before dividends, just as it was calculated in the summary of operations. I would venture to guess that not many companies calculate their return-on-GAAP equity on a before dividend basis. We decided to use this measure because it is more difficult for management to manipulate the magnitude of the results in the short term simply by changing dividend scales. Therefore, we eliminate a potential conflict of interest between management and policyholders.

After adding the effects of interest on GAAP equity and federal income taxes, the return-on-GAAP equity is calculated, where GAAP equity is equal to the required surplus plus the difference between the statutory and GAAP reserves plus the GAAP reserve for dividends.

TABLE 3

Sample Book Income Analysis

	Current Month	Year to Date 1992 Actual	Year to Date 1992 Plan	Year to Date Variance (Unfav.)	Year to Date 1991 Actual
BOOK INCOME ANALYSIS					
Book Income (Loss) as % of Premiums					
Based on GAAP Pricing Assumptions		1.2%	1.3%		2.1%
Actual (Expected for Plan)		3.7%	1.5%		6.5%
Difference		2.6%	0.2%		4.4%
Book Income (Loss)					
Based on GAAP Pricing Assumptions	800	6,500	7,000	(500)	10,200
Actual (Expected for Plan)	4,300	20,600	8,000	12,600	31,600
Difference	3,500	14,100	1,000	13,100	21,400
Analysis of Difference					
Mortality	1,400	9,000	5,000	4,000	14,000
Lapse	1,800	10,000	2,000	8,000	3,000
Expenses	(800)	(15,000)	(7,000)	(8,000)	(2,000)
Dividends	700	10,000	2,500	7,500	6,000
Investment Income	300	1,400	(200)	1,600	1,200
Excess Gains from Ancillary Sources	(200)	(1,800)	(1,900)	100	(1,700)
Other	300	500	600	(100)	900
Total	3,500	14,100	1,000	13,100	21,400

TABLE 4

Sample Adjusted GFO Summary

	Current Month	Year to Date 1992 Actual	1992 Plan	Variance (Unfav.)	1991 Actual
ADJUSTED GFO SUMMARY					
Adjusted GFO - Before FIT & Dividends					
Traditional	28,600	223,700	208,000	15,700	214,700
Universal Life	100	900	800	100	700
Variable Products	200	2,000	2,200	(200)	1,800
Total Adjusted GFO - Before FIT & Dividends	28,900	226,600	211,000	15,600	217,200
Federal Income Tax	1,000	9,500	10,000	(500)	9,200
Total Adjusted GFO - Aft FIT & Before Divs	27,900	217,100	201,000	16,100	208,000
Policyholder Dividends	14,400	115,000	120,100	(5,100)	110,000
Tabular Interest on PH Dividends	7,700	66,200	64,900	1,300	57,900
Total Adjusted GFO - After FIT & Dividends	5,800	35,900	16,000	19,900	40,100
GAAP Equity:					
- Designated for Dividends		850,000	840,000		750,000
- Undesignated		820,000	800,000		760,000
Total GAAP Equity		1,670,000	1,640,000		1,510,000
Return on GAAP Equity (Before Div & FIT)		13.6%	12.9%		14.4%
Return on GAAP Equity (Before Div & after FIT)		13.0%	12.3%		13.8%

Remember, we're calculating the ROE on a before dividend basis. Then, the GAAP return on equity is calculated by dividing the GAAP gain before dividends by the GAAP equity.

Now, before you all go off and tell your senior managers that you've seen the light, and GAAP financials for mutual companies is the best thing since sliced bread, let me warn you of some of the pitfalls and difficulties that you will probably run into along the way.

If we had been smart enough to start calculating GAAP reserves in 1910, we would have avoided the most difficult task that we faced; that is, determination of the GAAP equity at the beginning of 1988. The calculation required us to gather all of the historical dividends paid to in-force policies, as well as the assumptions underlying those dividend scales. To help make the task a little easier, we used perfect hindsight in the selection of our dividend scales and assumptions. Only after we collected all of this information, were we able to calculate the GAAP reserves for our in-force block of business.

Of course, no financial reporting structure can be useful if management doesn't understand the results. Be prepared to spend a lot of time explaining how GAAP results will differ from the statutory results that they've been looking at for the past 20 or more years. It's important that management understands what financial signals will be generated by the occurrence of different events. And remember this, at inception, GAAP financial reporting will tend to turn future statutory profits into past GAAP gains. This isn't necessarily endearing to those in management being paid incentive bonuses based on current and future earnings.

One of the easiest traps to fall into concerns wild celebrations just because a line of business produces a positive gains from operations. Since required surplus is allocated to all lines of business based on the riskiness of the business, lines can increase their investment income simply by increasing their risk. Positive gains mean little unless related to the amount of assets earning those gains. Hence, some relative measure of earnings, such as return on equity, is essential in measuring the adequacy of GAAP earnings. Other possible measures include the aforementioned premium ratio analysis or a gain-by-source analysis comparing actual to

expected earnings. Of course, a reasonable benchmark needs to be determined to make any of these analyses meaningful.

Before I let you all run off thinking that the only GAAP-like adjustments that we make are to individual life insurance liabilities, I should mention the other types of adjustments made in determining our management report gains from operations.

The most significant adjustments concern the treatment of investment income. Statutory investment income is adjusted in the following two ways: First, capital gains and losses are amortized over a five-year period. Second, equities are imputed with current investment income comparable to that earned by bonds, which takes into account expected capital gains. Any necessary true-up is done at the disposition of the equity.

There are also GAAP-like adjustments made to liabilities when determining gains from other lines of business. For instance, gains from our reinsurance department are calculated using an amortization of acquisition expenses. And group life and health gains are determined using a separate set of management report reserves for LTD that are based on pricing assumptions.

In closing, I'd like to say that I don't think that we'll ever return to the good old days in the life insurance industry. However, I encourage all mutual company actuaries to present the idea of GAAP-like financial reporting to your senior management team. At least that way, somebody in the year 2025 won't have to refer to these as the good old days.