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VALUE-ADDED FINANCIAL STATEMENTS

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- In this session participants will learn:
  - The definition of a value-added financial statement
  - Advantages of value-added approach relative to other financial statements
  - Relation of value-added to level-rate-of-return method
  - Treatment of deferrable items
  - Recursive methods of preparing value-added statements

MR. BURTON D. JAY: We'll be talking about value-added financial statements, what they are, how they compare to other types of life insurance company financial statements, and some actual experience with their use. We'll also be talking about, by contrast, some other management-based accounting systems that are in use in life insurance companies.

We will draw specific attention to what's called the level-rate-of-return method and its relationship to the value-added method. The level-rate-of-return method was described in the September 1986 report of the Committee on Accounting Principles for Management Financial Statements of Mutual Life Insurance Companies. This is a system where a special reserve is determined; each year's gain from operations, based on the increase in that reserve, divided by equity, where equity is based on the excess of required assets over that special reserve at the beginning of the year, is equal to the internal rate of return (IRR) on the business being measured. This system is identical to the value-added system if the hurdle rate (the rate used to discount future earnings in the value-added system) is set equal to the product's internal rate of return.

We need a more meaningful way to count the beans. Statutory accounting doesn't cut it anymore. Statutory accounting is primarily a conservative demonstration of solvency. That's all it was really intended to be when it was defined many years ago. In fact, I've often heard it said that the earnings statement in a statutory system is merely how you get from one balance sheet to the next.

The statutory system doesn't even measure the right lines of business that you need to manage your segments. In one example from the Mutual of Omaha Companies, we have a growing operation in Japan; we have a direct-response or direct-mail operation; and we have our agency business, all of which sell ordinary life insurance. And all the information from all three of these different segments are combined together in one line, ordinary life insurance, on the annual statement -- absolutely useless.

Statutory accounting also doesn't provide a meaningful way to manage surplus; you have to do this externally to the system. We feel that you need to assign a portion of your surplus to each business unit and that the amount of surplus assigned should be appropriate for the size and the level of risk of that unit. The amount left over is the unassigned surplus or the corporate surplus. I've also heard it called venture surplus. This amount can be identified for other types of investments. You can buy other life insurance companies or any other kind of companies, or you can grow profitable strategic business units that give you a way to do something that's often referred to as portfolio management. In portfolio management, you decide whether to feed or shoot a line of business depending on how well it's doing, i.e., what the return on equity is.

Statutory information penalizes a business for writing increasing amounts of profitable business, precisely what the manager should be rewarded for. A more useful system would reward a line-of-business manager for writing more profitable business.

We, in Omaha, now are in the process of installing a new system for financial management that overcomes these statutory deficiencies. The system will be the key measure of the financial performance for each Mutual of Omaha unit in the future.

MR. BRUCE J. NICHOLSON: The value-added approach to financial measurement is derived from actuarial appraisal methodology. An actuarial appraisal develops an estimated range of economic values of an insurance company. The technique used is a discounted cash-flow analysis, which is similar to that used by financial analysts in determining the value of companies in other industries.

In an actuarial appraisal, the cash flows that are discounted are usually statutory. One must consider three different sources of statutory cash flow in developing a range of values:

1. Net Investment Income on Adjusted Statutory Capital and Surplus. Adjusted statutory capital and surplus usually includes Mandatory Securities Valuation Reserve (MSVR), certain nonadmitted assets, and other surplus like items. It is then usually assumed that the required risk-adjusted rate of return on these assets and the actual net earned rate of return is the same. Consequently, the value assigned is equal to the market value of the assets assigned to adjusted statutory capital and surplus. It is usually referred to as the adjusted net worth of the company.

2. Statutory Book Profits from Business in Force at the Date of the Appraisal. Statutory book profits are those profits used in Anderson's method. They include investment income on the statutory reserve and are reduced for the increase in statutory reserve. Statutory book profits are projected using current assumptions. Three or four discount rates are usually used to produce a range of values. The discount rates should represent typical risk-adjusted rates of return required by a potential buyer. The present value of these statutory book profits is usually referred to as the value of business in force.

3. Statutory Book Profits (and Losses) from Business Assumed to be Issued After the Date of the Appraisal. The usual approach utilizes "dual discount rates." First, the present value of these statutory book profits at issue is calculated per unit of new business sold. The same discount rates as those used to determine the value of business in force are used. Then future sales are projected based on a combination of past results and the company's current business plan. The present value of the statutory book profits at issue multiplied by the units of business sold is then further discounted from the date of issue to the date of the appraisal at a discount rate higher than that used to discount the profits to issue. The resulting value is referred to as the value of future business or future business capacity or existing structure value.

It is important to note that value-added measures the change in the value of a company over a period of time rather than the value at a point in time. Accordingly, two changes are usually made to the basic actuarial appraisal methodology:

1. The value of future business is usually omitted from the calculations. By its very nature, the value placed on future business in a merger or acquisition situation is highly subjective. How many years of future sales should be used? What is the distribution of sales by plan? How profitable are new sales? What should the assumed level of future sales be? It is safe to say that reasonable actuaries have differed widely on their perspective as to the value of future sales.

   The only time you may wish to include a value for future business is when the company plans to make substantial investments in developing the capacity to write future business, such as a planned rapid expansion of the agency force. In most other cases, the percentage change in the total value of the company will track very closely to the change in the sum of the first two components of value. If the third component is to be included, care should be taken to assure that its measurement is on a consistent basis throughout.

   It should not be inferred from this discussion, however, that the sale of new business does not impact the value-added calculations. Quite the contrary, the profitability of new sales has a tremendous impact on the value-added financial statement, as we shall see later when we discuss the recursive method of preparing value-added financial statements.

2. One discount rate, the so-called "hurdle rate," is used in determining the value of existing business rather than three or four. This should represent the company's minimum desired rate of return on new business. There are many different theories and points of view on what constitutes the proper hurdle rate. This is another area where reasonable actuaries have been known to disagree. Different companies will come to different conclusions about what that hurdle rate ought to be. And I would simply say that it really ought to be defined, whether it's external markets, a parent company, or if you're a mutual company, it might be your long-term growth rate. But it needs to be defined in order to come up with the values. I'm not going to spend a lot of time discussing what all the considerations are, but the hurdle rate is obviously a very important assumption. Fundamentally:

   - o If the IRR is equal to the hurdle rate, the sale of new business does not create or destroy value.
   - o If the IRR is greater than the hurdle rate, value is added upon the sale of new business.
   - o If the IRR is less than the hurdle rate, value is subtracted upon the sale of new business.

This relationship provides the link to the pricing process.

In the discussion so far, statutory book profits have been used as the cash flows, because they represent the funds "available" to shareholders and/or policyholders, either as a dividend or for investment in new business. However, in recent years, more and more companies are building target or required surplus formulas into pricing and financial reporting. Burt was alluding to the process at Mutual of Omaha. When you do this, the cost of capital is reflected in profit testing and measuring financial performance. I believe this is appropriate and should be carried over in a value-added reporting system.

The way to do this is to define "available profits" as statutory book profits less the increase in required surplus plus net investment income on target surplus. Other terms I've seen used for available profits include "contributions to free or corporate surplus," "modified statutory profits," and "surplus transfers."

By calculating the value of existing business as the present value of available profits instead of statutory book profits, we are in essence transferring target surplus from adjusted net worth to the value of existing business. Since the hurdle rate is usually greater than the net investment rate earned on target surplus, the value placed on target surplus is reduced or "sterilized" in the calculations. Adjusted net worth becomes the "free" or "vitality" surplus of the company. The profitability of new business now depends on the relationship between the hurdle rate and the IRR on available profits.

Whether you use statutory book profits or available profits, be consistent. If your profit criteria is based on available profits, use available profits in calculating the value of business in force. Likewise, for statutory book profits. Throughout the rest of my remarks, I'll stick to basing my value-added calculations on available profits.

To illustrate the principles behind the value-added method and the key relationships involved, we've constructed a simple example using a 10-year endowment policy. Some of the details of product specifications and assumptions are:

- o The assumptions are based on an illustration given by Jeremy Goford in his paper "The Control Cycle."
- o Target surplus is equal to 10% of reserves.
- o The IRR using available profits is 22%.

A model office was created by starting the company with $25 million at January 1, 1978. It was then assumed that the company sold $10 million of premium in 1978, increasing by 10% each year through 1987.

The recursive method of developing the value-added each year is developed by looking at the way each component of value changes during the year. Free surplus is increased by the net investment

income earned on free surplus. The value of business in force is increased with interest at the hurdle rate. The available profit from business in force is released into free surplus.

The value-added balance sheet at the end of 1986 and 1987 would look like this:

Millions of Dollars

	1986	1987
Invested Assets	$494.6	$553.5
Value of Business In Force	102.0	112.2
Total Assets	$596.6	$665.7
Policy Reserves	$441.4	$485.5
Target Surplus	44.1	48.5
Shareholder Equity	111.1	131.7
Liabilities and Surplus	$596.6	$665.7

The 1987 value-added income statement would be as follows (in millions of dollars):

Statutory Net Gain	$14.7
Increase in Target Surplus	4.4
Available Profit	$10.3
Increase in Value of Business In Force	10.2
Value-Added	$20.5

The return on shareholder equity is 18.5%.

The available "loss" in the current year attributed to new sales is funded from free surplus, while the present value of future available profits is added to the value of business in force. The net of these two numbers is, of course, the value added from the current year's sales. These entries produce the free surplus and value of business in force at the end of the year.

The value added is thus reduced to:
- o Investment income on free surplus, and
- o The hurdle rate times the value of business in force at the beginning of the year, plus
- o The value added by new business sold during the year.

In our example, 15% of the value of business in force at the beginning of the year is $15.3 million. Net investment income on free surplus is $0.6 million, and the value added by new business is $4.6 million. As you can see, the total value added produced by this method, $20.5 million, is the same as that shown in our income statement.

Let me close by giving you some observations on why companies have turned to the value-added method for measurement of financial results, how they're doing in implementing the process, and what might be in store in the future. We've worked with an increasing number of companies in recent years in developing value-added financial measures. Most of these companies are drawn to the value-added method because they feel their existing financial measures -- statutory, GAAP, modified GAAP, etc. -- do not properly reflect the company's real performance. While this is often true, many company executives are not always prepared for the value-added results, particularly losses on unprofitably priced new business. Nevertheless, most companies go through with the process, simply because it helps them understand their business from a new perspective.

Most of our work has been at the front end, that is, helping companies develop value-added projections. It can be a powerful tool in planning, particularly when available profits are used. The projections show how much capital is required to support the growth of future business, and how the sale of new business can leverage the value of the company up or down. Often we are faced with the situation where the IRR on new business is less than the hurdle rate if the company's current experience is translated into pricing assumptions.

Our approach is then to:

- o Define pricing assumptions that produce an acceptable IRR (at least as great as the hurdle rate),
- o Quantify the difference or "gap" between pricing and current experience,
- o Determine how the gap will disappear, and
- o Calculate the present value of the gap at the hurdle rate and deduct from the value.

This is consistent with practices followed in developing an actuarial appraisal of a company. In essence, the value-added approach quantifies a company's plan for eliminating the gap between pricing assumptions and current experience, and it provides a way to measure how the company does against the plan within a unified financial framework. As you would expect, the parameter, which most often gets this treatment, is company expenses.

Many of our clients are just now starting to go through the process of analyzing the results of their first value-added performance cycle. The degree of success they have had is directly proportional to the quality of their financial projection system. While it is true that a value-added perspective can often be obtained by using somewhat more approximate methods in the initial stages, the value in monitoring, analyzing, and interpreting the results can only be fully realized when a comprehensive model of the company's business is used to project future profits. Such a model would seem to be called for in any case to help companies deal with the financial uncertainties they face today.

I believe more and more companies will be using value-added measures in some form in the future, usually as an internal management tool. Most of these companies will eventually find that they need to develop a sophisticated model to help them through the process. In any case, I'm sure all of us will learn a great deal about how we can improve the process in future years.

MR. VIRGIL D. WAGNER: I have to tell to you that I was rather pleased when I came to Life Investors originally, now AEGON USA, to see us on a value-added project, because about 18 years ago, I was with a company, having just left the consulting profession, and I had done a lot of the appraisal work that Bruce was talking about. My boss asked me if I had any ideas on how we might evaluate the performance of the company we owned, and I said to appraise a company, I take the book value, make some adjustments, and add the present value of the business in force. Why couldn't we do that at the end of the year and do it again at the end of the next year? And if it's bigger, that's good news. Well, he liked that and we started doing that. The only thing is I didn't write a paper, and so this didn't become the Wagner method of valuation during that time.

My role on this panel is not to tell you what value-added accounting is nor how it works. Neither is it to go through a theoretical analysis of the subject. Rather, it is to tell you what the value-added method is to us at AEGON USA, why we are using it, and what some of the practical considerations were for its implementation.

First, let me tell you a little bit about AEGON USA. AEGON USA is a new name as of January 1, 1989. It is the wholly-owned subsidiary of AEGON nv, a major Dutch financial services company. AEGON USA is the combination of three previous U.S. insurance holding companies you would recognize as the Life Investors companies of Cedar Rapids, Iowa; the Monumental companies in Baltimore, Maryland; and National Old Line (NOL) of Little Rock, Arkansas. My comments on implementation of value-added accounting for AEGON USA will be biased toward the implementation at Life Investors since Life Investors was, for the first time, computing a value-added statement for 1988. The Monumental companies had already prepared value-added statements for 1987 and again in 1988. Beginning in 1989, the NOL companies will be included, and all of AEGON USA will be making the value-added computations. Hence, we have a little experience to draw on and one full operation still to begin work on.

Originally, I was asked, how preparing value-added statements relates to having a foreign parent. Let me get that out of the way first. Very simply, value-added is not Dutch accounting. The closest we get to Dutch accounting as far as value-added accounting is concerned is that we use Dutch Accounting Principles (DAP) balance sheets for our noninsurance operations. On the other hand, I believe it is true that there has been some experimentation in Europe, in particular Great Britain, on the use of value-added accounting as a supplement to corporate financial reports. This is not because the British use value-added accounting as a uniform standard, but conversely, it is

because rigid accounting principles, such as we have in the U.S., do not exist and, therefore, such additional information can be voluntarily included to assist an analyst in reviewing a company's results. As a result, value-added concepts may have been used earlier in European companies and also could appear as part of published financial statements. Incidentally, AEGON USA is a test case for the AEGON nv organization. If value-added accounting proves successful in providing the information that our parent is looking for, it will be expanded to its other foreign operations.

As I said, I am not here to give you formulas and theoretical discussion. However, I must give you at least our basic formula so that I can use it as a basis for further discussion. The formula is simply: change in total value equals change in adjusted book value plus change in net present value. The adjusted book value is based on statutory book value for insurance companies and DAP book value for noninsurance companies. The net present value is the present value of statutory earnings using current assumptions. I emphasize current assumptions because there could be confusion when one says present value of statutory earnings. This implies statutory assumptions, which is not the case.

Why do we want to use value-added accounting? Our parent is looking for a management performance measurement, which is based on return on investment concepts. It is natural to think of return on a 100% owned organization in terms of return on the investment in that operation. On the other hand, "investment" in the operation must be suitably defined as a basis for calculating management performance. For example, if the purchase price included a significant amount of goodwill, it might not be proper to measure management performance against a standard return on that investment. For example, in our case, the management performance measurement using the value-added method will be used to determine payouts for a long-term incentive plan.

I know we could get into a long discussion as to which types of accounting methods produce the most realistic information. Our thinking is that the value-added approach better reflects what management has done now as opposed to what it did ten or fifteen years ago as is generally provided by historical accounting models such as GAAP or statutory. We believe that adding the present value of new business put on the books makes a lot of sense for purposes of measuring current performance. On the other hand, we do use GAAP for our short-term incentive plan. I would be the first to admit that there seems to be some inconsistency in criticizing GAAP for its historical measures but continuing to use it as the basis for the short-term plan. It is intended that the year-by-year GAAP results will provide interim management points to tell us if we are heading toward the long-term goals. I think reconciliation between the two may turn out to be a major project of its own.

Now, let me go over some of the decisions that we had to make before beginning the calculations. First are decisions relative to the model itself. It goes without saying that one must first decide whether to buy, borrow, or build a model. Once a model is in hand, certain modelling decisions present themselves. For instance, should projections be made on a stochastic or a deterministic basis? We plan to use the same model for asset/liability management, in which case we will use a stochastic approach. However, for our first round of computing value added we decided on a deterministic model. We believed it would be both easier to perform and also easier to explain to the various profit centers. We are considering going to a stochastic basis for our value-added computation in the future. Another simplifying decision that we made is to use cash as a proxy for assets rather than modelling the actual assets. Some of you may cringe at such simplification, however, using cash as a proxy is probably not that different from making assumptions about sales and reinvestment rates of assets.

In our work so far, we have modelled over a 20-year horizon. We now are looking at results and really wondering a bit about this decision. The increase in value from year-end 1987 to the year-end 1988 is increased significantly merely from the addition of one more year of modelled business discounted from only 20 years out. I talked to Bruce about this earlier, and I'm going to mention target surplus later on, another one of our decisions, but we are not including target surplus in our net present value calculation. It's a possibility that including target surplus would diminish this problem. So, we're really looking at this to see what our results will be. Also, if we had used a longer period, such as 30 years, the effect of rolling forward one year would not be so great.

Finally, we had to choose the segments of our business, which we could model most effectively. Perhaps a separate model for each line of business would be easiest to deal with, however, we have the same line of business in many profit centers as well as many companies. We chose profit centers (business units) as the unit, which we would model. This gives us the most useful management information.

Another decision area is that of adjustments to book value. A couple fairly obvious ones are the add back of MSVR and nonadmitted assets to the statutory book value. Another adjustment is the increase of market value over book value, for example, of real estate. Federal income tax adjustments include the necessity to effect tax on unrealized gains and to consider any carryover or carryback. Another significant adjustment is for any capital contribution or withdrawal during the year. Obviously, if a parent puts capital into a company, management cannot be credited with having increased the value by that amount due to its magnificent performance. Other items that need to be reviewed are deferred income or expense items. In our case, we had one unit with a significant amount of solicitation expense associated with income, which does not appear for three to four months later. It seems proper to match this expense and income in determining return on investment.

Now, let's look at some other decisions. While I list them as "other," they are quite significant.

The discount rate, for example, is a most major decision. It gets considerable debate, and there are many theories as to what the appropriate discount rate for a given type of business should be. We found this to be a rather easy one. We were told that the target return on a value-added basis would be 12% after tax. So much for that discussion. Another whole family of decisions relates to the various actuarial assumptions used in the model. These, of course, are best estimates based on experience.

Another rather interesting discussion is treatment of target surplus. Given that our objective is a 12% return after tax and after target surplus, it seems, as Bruce says, that target surplus should be included in the computations of net present value. However, due to complications in explaining discounted streams of future surplus to a board of directors, we were given the more simple approach of not including target surplus in the net present value calculation. The result is that new business priced to produce exactly our return after target surplus, will not add zero value at time of issue as it should. We will need to address this in our pricing or reopen the issue of treatment of the target surplus in the model if we are to achieve consistent results.

Another of the more interesting of our decisions was what we should include as net present value for our group health line of business. At the time we were making these decisions, we were losing money hand over fist in group health insurance along with most of the rest of the companies in the business. To compute a positive future value for such business is rather hard to sell even if you think it's appropriate. We decided on a rather general rule in the health insurance line whereby any health insurance, which in its pricing is dependent upon a future stream of premium income to make its profit objectives, would be modelled so as to give credit to that future premium. On the other hand, group health, which basically stands on its own year by year, is not modelled, but is assigned a zero present value. Profit or loss flows through to the bottom line, increase or decrease only the book value in the year of measurement.

Finally, I mentioned earlier the subject of goodwill. You will note in the formula I gave you, we left goodwill out. It is merely treated as a constant factor. This does not give credit to management where it has taken action in fact, to substantially increase goodwill. Any adjustments of this sort, however, can be added during a particular year.

Let's talk a bit about the cost benefit relationship of this project to us and what it might be to you. First, it is a major project, which requires a huge time commitment. I believe this would be true for most anyone who does it regardless of how great your current records and models are. Naturally, if your models and information systems are less complete, the job will be bigger, but the benefits may be greater also. It will take a good project manager and some tough priority setting to get it accomplished in anywhere near the original time frame. As a by-product, we have developed models, which will be very useful for other purposes. These models would be for asset/liability management as well as projections for budgeting or analysis purposes. Another by-product has been the education we have received about our own business as a result of trying to reconcile the increase in value on a gain or loss by source basis from one year to the next.

When things don't reconcile, there is either a problem with the assumptions, with the model, or with your own knowledge of how a particular product works in the marketplace. I think we found some of each of those. For example, we have one line of business where we made the assumption that we would get a considerable amount of surrender-charge income. Then we found out that the interpretation of the product by the people managing the business unit as well as perhaps our interpretation of the product were different, and we didn't in fact get that income, and it was throwing off the model. That's just an example of the kind of thing that you might find that I consider a benefit of having done it.

In conclusion, I would say that while the project has been difficult (some other things have had to be put aside, and we may have complained a bit about it at times), it is well worth doing. We would do it again if we had to make the decision all over again.

MR. DONALD R. SONDERGELD: I am quite familiar with financial statements of stock life insurance companies having worked for two of them since 1955. However, earlier this year I joined The Mutual Benefit Life Insurance Company as Chief Financial Officer. Therefore, I have given a lot of thought to a management-oriented financial reporting system to use at a mutual company.

Although stock life insurance companies use GAAP, many of them define profitability as an expected return on their investment, where the investment in the first year is the statutory after tax book profit -- either including or excluding statutory, benchmark, or target surplus. My 1982 paper "Profitability as a Return on Total Capital" *TSA* 34 discussed the technique of including benchmark surplus in the profit-testing formulas and in the reporting of earnings. It also showed the relationship between the unlevel GAAP returns on equity and the statutory internal rate of return.

However, my 1974 paper "Earnings and the Internal Rate of Return Measurement of Profit" *TSA 26* referred to what I call my friend IRRMA (the Internal Rate of Return Method of Accounting). It is equivalent to the "level return on equity" (ROE) method of accounting.

Burt mentioned the September 1986 Society of Actuaries Report of the Committee on Accounting Principles for Management Financial Statements of Mutual Life Insurance Companies, which was distributed by the Financial Reporting Section Council on January 14, 1987. It is a fairly recent report and an excellent one. It should be read by anyone interested in financial reporting.

That report listed a number of accounting methods that one might consider for internal management reporting. Various accounting methods were compared, which have names like statutory, stock company GAAP, dividend charge method, retrospective deposit method, composite method, sources of earnings method, level return on equity method, and value-added method. The conclusion of that report was that the level return on equity accounting method produces the most useful form of mutual life insurance company financial statement for management purposes, as it best reflects (a) realistic operating results and (b) the current equity position and the period change in that position.

One of the things to consider in choosing an accounting method is the "purpose principle." That is, the "purpose" must be kept in mind. Under statutory reporting, conservative actuarial assumptions are adopted. However, if an actuarial appraisal of a company is being performed, realistic actuarial assumptions are appropriate for that purpose.

Another principle is the "uncertainty principle." That is, the mortality, interest, expense, and persistency assumptions -- are assumptions. This means there is some uncertainty as to whether they will be realized or not. And the longer the time horizon involved, the greater the uncertainty.

So in comparing different accounting methods, it is important to have agreement on what the purpose is. Are we trying to measure economic reality, how management is performing, or how the company is doing financially? I don't believe one method can efficiently measure all of these. For internal management reporting, I prefer one that measures how the company is doing. This may or may not be related to management performance.

VALUE-ADDED FINANCIAL STATEMENTS

For the purpose of this panel discussion, I will compare management-based financial statements under two similar accounting methods: the level return on equity method and the value-added method. Under the ROE method, expected statutory book profits in the future are discounted at the ROE, whereas under the value-added method, they are discounted at a "hurdle rate," which is a company's minimum risk-adjusted return on equity objective.

For those of you not familiar with the basic concepts of these two methods, let me provide a simple example. Let us assume that a new product is profit tested, using realistic actuarial assumptions, and the expected ROE is 9%. If the company's hurdle rate for that product is 8%, management has a warm feeling since the hurdle has been exceeded by 1%. The present value of future book profits discounted at the 9% ROE is by definition zero. If we discount the future book profits at the 8% hurdle rate, we will get a positive value, called the "value added."

Let us further assume that the application of the value-added accounting method produces a 12% ROE the first year. Then, if all of the actuarial assumptions are exactly realized, a company using the value-added method would report an ROE that would be 12% the first year and then a level 8% in all renewal years, whereas, a company using the ROE accounting method would report a level 9% ROE each year. Which is better? I'll come back to this basic question, but let us look at some tables.

TABLE 1

Security A $10,000 investment is made in a security that has an $800 annual dividend.

Its market value drops to $8,000 at the end of the first year and rises to $9,000 at the end of the second year.

It is sold for $10,450 at the end of the third year after the third $800 dividend is paid.

	Year			
Book Basis	1	2	3	Total
Dividend	$800	$800	$800	$2,400
Realized Gain	0	0	450	450
Earnings	800	800	1,250	2,850
Equity*	10,000	10,000	10,000	
Return	8%	8%	12.5%	
Market Basis				
Dividend	800	800	800	2,400
Realized Gain	0	0	450	450
Unrealized Gain	-2,000	1,000	1,000	0
Earnings	-1,200	1,800	2,250	2,850
Equity*	10,000	8,000	9,000	
Return	-12%	22.5%	25%	

*At beginning of year

On a book basis, we simply have an 8% return for the first two years, and then the third year we sell the security and realize a $450 gain, giving us a 12.5% return that third year. The total earnings over the three-year period, of course, are $2,850. However, if we adopted a market value accounting method, the first year we have a minus 12% return because we factored in the $2,000 unrealized gain. The second year we have a 22.5% return and the third year a 25% return. And over the three-year period, we report the same $2,850 gain. So there are two accounting methods that can be used in accounting for the return on this particular security.

TABLE 2

Insurance Product — A $10,000 investment is made in an insurance product, with an expected book profit pattern identical to the 8% security of the prior example.

	Year				
	0	1	2	3	Total
Statutory Basis					
Earnings	-10,000	800	800	11,250	2,850
Level Return On Equity (ROE)					
Earnings		937	950	963	2,850
Equity*		10,000	10,137	10,287	
ROE Return		9.37%	9.37%	9.37%	
Value-Added (H=8%)					
Earnings		1,186	831	833	2,850
Equity*		10,000	10,386	10,417	
ROE Return		11.86%	8%	8%	
Value-Added**		386	0	0	
Value-Added (H=12%)					
Earnings		483	1,162	1,205	2,850
Equity*		10,000	9,683	10,045	
ROE Return		4.83%	12%	12%	
Value-Added**		-717	0	0	
Value-Added (H=18%)					
Earnings		-442	1,576	1,716	2,850
Equity*		10,000	8,758	9,534	
ROE Return		-4.42%	18%	18%	
Value-Added**		-2,242	0	0	

* At beginning of year
** (Return minus Hurdle Rate) X (Equity at beginning of year)

NOTE: H is the hurdle rate. ROE and value-added are equal when ROE equals H.

Now I want to assume that this security was not a security, that it was an insurance product where the actuary had precognition like we all do of just what's going to happen in the future. We design an insurance product where the first-year statutory drain is $10,000, and we expect $800 of earnings in the first and second year, and in the third year we have the $800 earnings plus the $450 gain or $1,250 of earnings. It's the same type of numbers that we had from Table 1. On a statutory basis you would say your internal rate of return is 9.37%; it happens to work out to 9.37%. If you adopted the level return on equity method and all of your actuarial assumptions were realized, you would then report $937 of earnings the first year, $950 the second, $963 the third, and you would have a 9.37% ROE each year. And the earnings over that three-year period would be the $2,850 that we had in our previous example or that we would have on a statutory basis.

This same table shows a value-added calculation at 8, 12, and 18%. If the hurdle rate were 8%, you would actually show 11.86% returned the first year, and an 8% return in the second year and third year. Your value added the first year would then be the $386, which is the difference between your actual return of 11.86% and your 8% hurdle rate and the equity at the beginning of the year. So in this example you show a $386 value added the first year and, of course, zero value

added in the next two years because your actual assumptions are now being realized. But your total earnings over the three-year period are, of course, your $2,850; you can't get around that number.

Continuing the example using two other hurdle rates, if the company's hurdle rate were 12%, which had been mentioned earlier, a rate that exceeds the level return on equity or internal rate of return rate of 9.37%, your value-added return the first year turns out to be 4.83%, and your value-added, which is the difference between your 12% and your 9.37%, gives you a negative $717 the first year. In the second and third year you actually report your hurdle rate of 12%, and you have zero value-added in the second and third year and a $2,850 total earnings over that three-year period. I did one more example where you get a negative return or negative earnings in the first year by picking a hurdle rate of 18%. So, you actually have negative earnings that first year and a negative value added, but the same arithmetic applies to the second and third year.

If a company purchases a zero-coupon bond, it doesn't wait until maturity to report all of the earnings. It accrues the discount and reports a level return each year. If the bond is sold prior to maturity, the gain or loss on sale is reported at time of sale.

I have read that the hurdle rate should be a real rate of return adjusted upward for inflation, for risk, and for duration (i.e., yield curve). It would seem to me that over time, with new and renewal business of different product lines, each with different families of hurdle rates, that the explanation to management of the current aggregate ROE would need to be carefully orchestrated. Under the value-added accounting method, earnings are front-ended if the expected ROE is greater than the hurdle rate. The results of the accounting method should not be affected by varying opinions as to the appropriate hurdle rate or family of hurdle rates to utilize. This is my main criticism of the value-added accounting method.

When a policy is issued, should the hurdle rate used for value-added financial statements be locked in, or should it be redetermined periodically as economic conditions change? If I understand value-added accounting, it would change as the economy changes. I presume any budgeting process for net income would, therefore, need to be "inflation adjusted" when comparing actual results with those budgeted.

Under the value-added method, if management decides to change the hurdle rates on in-force business, I understand the technique is to revalue the business at the new hurdle rates at the beginning and end of the year. Thus, the "value added" that year is not affected by the change in hurdle rates. However, the "revaluation adjustment" must be reflected in the value-added surplus account. Also, the value-added earnings for the current year and prior years are not strictly comparable. These are other concerns I have with the value-added accounting method.

Arguments given in favor of value-added financial statements are tied to the concept of the economic value of the company. The "value added" is the change in net worth. However, in the day-to-day financial management of a company -- especially one that is not about to be sold -- management should be interested in how the company is doing and not be focusing on its market value. This is especially true for a mutual company. If 5% five-year bonds or 7% seven-year bonds are purchased, those results should be reported on as 5%, or 7%, or as a combination thereof if a mixture is purchased. Similarly, if a company sells a life insurance product with an expected 9.67% ROE, it would be consistent to expect to show that 9.67% result each year.

Assume Company X and Company Y use the value-added accounting method on some coinsured business, using the statistics in Table A. If Company X had a 12% hurdle rate, it would show a 4.83% return the first year and a 12% return in future years. If Company Y had an 8% hurdle rate, it would show an 11.86% return the first year and an 8% return in future years.

Some companies that use the value-added accounting method also include the value of future business not yet sold, whereas other companies omit this. Many assumptions need to be made if the value of unsold business is included.

If Companies A and B use the value-added accounting method, how do they value their free surplus? Do they value it at market? I presume they do, unless they have hurdle rates applicable to free surplus. In that case, they might revalue all of the assets that are represented by free surplus at the hurdle rates they believe are applicable to their free surplus.

To summarize, I think the major problem associated with the value-added accounting method is the determination of the appropriate family of hurdle rates -- and deciding how frequently they need to be revised due to changes in economic conditions.

I prefer the ROE method over the value-added method. The ROE method treats the investment in an insurance policy much like the investment in a security. That is, the expected return is level over the expected life of the investment.

There are uses for the value-added method, as I make a "value-added" calculation applicable to new business each year. However, routine reporting of financial results to internal management can better be accomplished using the level return on equity method.

MR. STEVEN PAUL TAYLOR-GOOBY*: I'd like to add a few comments, from my own experience, that have an international perspective. I've been working for the last two years on an actuarial working party, which has been considering how the U.K. should define new standards for published financial statements for insurance companies. We've been considering a number of different options; we looked at U.S. GAAP, not very long I might add. We've also done a large amount of theoretical work looking up the actual value that is added by different functions in the business, for example the sales function, the administration function, the investment function. And that's a lot easier now that you have efficient secondary markets whereby you can write a policy and immediately lay off all the risk to a reinsurer, or get an administration firm to do your administration for you, or an investment firm. And we've developed this theory to the state where we feel that we can adequately measure the value added by different functions of the business. We feel that value should be recognized in published financial statements. If companies don't do it for themselves, then the investment analysts will do it for you, and they probably won't do it very well. This has led to a strong recommendation, which I must say hasn't been totally accepted by the accounting profession, that companies should use value-added accounting for their published financial statements. And I would say that about 20-25 companies in the U.K. are now doing this.

MR. ALBERT K. CHRISTIANS: The first presentation discussed a situation with no valuation adjustments in it, but it had value at the beginning and value added at the end. Everything went through; there were none of these adjustments for changes in the hurdle rate or other changes. Don said, on the other hand, that adjustments are typically used to separate out the effect of changes in the hurdle rate. And I could think of other changes as well if you're valuing some assets at statutory carrying values and some at market, and assets may move from category to category. You have other types of valuation adjustments that you might not consider part of the current year's real operations or part of the things that are under management's control. However, it appears to me that management's real purpose, if you adopt value-added accounting, is to manage the value of the company versus all the forces operating on it, including the forces that cause changes in the hurdle rate, and that really the first situation is right. There should be no valuation adjustments if you change the hurdle rate and management didn't make investments or select lines of business to foresee the changes in the forces that would cause you to want to change the rate. That ought to be management's responsibility if you accept this accounting model. Would the panelists comment on whether they are using these below-the-line type of valuation adjustments, and if so, why.

MR. NICHOLSON: I think that we haven't seen too many situations in actual practice where there's been that above- or below-the-line adjustment in the hurdle rates. I think if you look at the actuarial appraisals over the last 10 years, even though the market for interest rates has changed, the discount rates that have been used in them haven't changed all that much and haven't really reflected the market. Now whether that means that you look at the long-term expected rate of return differently on a life insurance company than you do other long-term rates in the market, I don't know. There's some sympathy for using something like a capital asset pricing model to define a minimum required rate of return. If you did that, the rate would change every year as interest rates changed. It's my opinion that the key determinant is in the year that you make the sale. How does the rate of return that you're getting on the business you sold that particular year compare with whatever hurdle rates you determined? After the business

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is sold and it's on the books, that's just a market-value adjustment similar to what you'd make for anything else and shouldn't reflect on management performance. I think what you have to focus on is not the absolute number of the value-added, but its relationship to the value you started with and make it on a consistent basis. I think companies are still kind of going through this because there's very little experience. I think most companies have not changed the hurdle rate from one day to another in the statements that they've done.

MR. BURTON D. JAY: If you did change the hurdle rate, would it normally be with respect to future business?

MR. NICHOLSON: I think you'd make the change on everything, and you would mark the value of the business in force to a different number when you did that.

MR. BRUCE E. NICKERSON: The value-added approach as described have underlying them a particular scenario for what the profits or what the cash flows of a product will be. In a mutual environment, and also in a stock interest-sensitive-product environment, one of the things that management can do is change the dividend scale; in many products the interest-credited rate on universal life and the mortality and expense charges are, at least legally, company discretion items. Therefore, one can at least envision the ability of management to add or subtract from value by its choices on these adjustable items. And of course constraints on those will be imposed, for example, by stated company philosophy and integrity and also, to a degree, by what other companies are doing. I would appreciate some comments from the members of the panel on how this sort of problem is being, or should be, addressed for somebody contemplating value-added accounting.

MR. SONDERGELD: I'm going to speak more from a level return on equity perspective, but I guess it's the same for value-added accounting. Actually, the two systems are very close together if the hurdle rate is similar to what you're getting. Management probably isn't going to shoot itself in the foot and pick a hurdle rate that's much higher than what it is achieving. Management is probably going to pick a hurdle rate that's lower than what the company might achieve. But where a mutual company has a dividend scale to fall back on, theoretically I think, Bruce, you can argue that, if you've chosen a hurdle rate and you're sticking with that hurdle rate, when economic conditions change -- let us say your assets are now earning a much higher rate -- you can increase your dividend scale so you're paying that to the policyholders. Whether you at that time decide you want to have a bigger profit charge by, if you will, changing the hurdle rate on in-force business, or not changing the hurdle rate on in-force business, I think that's a management decision. But I think there's both possibilities -- whether you do or don't change the hurdle rate on in-force business relating to a block of participating business.

MR. JAY: One of the concepts that we've considered in our system for our interest-sensitive products, which I believe are managed similarly to participating products, is to manage the spread on the interest rate and, where we have nonguaranteed mortality elements, to manage that spread. Our whole objective is to do something close to maximizing the profit or the return over the long term. And even if you have mutual company and equity considerations, you tend to manage that spread at least to do pretty well, if not to maximize it. This system gives you an opportunity to measure the performance of management on an ongoing basis as to how well you can manage those spreads in up and down markets and your strategy on setting the credited rates and the mortality charges year by year so that you don't lose the business that you have, and yet you get a reasonable return throughout the lifetime of the policy. This method gives you a way to measure how well you do that, as well as measuring the value of writing new business up front.

MR. WAGNER: I just wanted to briefly comment on Bruce's question, because I mentioned possibly going to a stochastic model, which would bring in, I think, some of the issues you raised, and that would introduce the sensitivity of credited interest rates and lapses, and so on, under different scenarios. We would actually be computing expected values instead of a precise determined value. I don't know what a stochastic model would be introducing that we wished we hadn't at that point, but we certainly are thinking about that.