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SESSION 11

Measurement of Financial Performance

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MEASUREMENT OF FINANCIAL PERFORMANCE

MS. PATRICIA L. GUINN: I'm with the New York office of Tillinghast, and I'm happy to have with me on the panel Doug Kolsrud, corporate actuary of Aegon USA and John Hele from the Merrill Lynch Insurance Group.

With each day that goes by it becomes clearer that the actuary's focus must be expanded from assuring the adequacy of reserves to also being concerned with capital adequacy. The question of capital adequacy is a dynamic, rather than a static, question: Does the company have adequate capital today, and where is the capital position headed? With this increasing focus on the totality of the balance sheet, a system of financial performance measurement is needed to assist senior management in the formulation and assessment of its business plan for the future, and to demonstrate to various constituencies (i.e., the regulators and rating agencies) the soundness of the business plan.

Following is an excerpt from the *Harvard Business Review* of late 1989:

> Shareholder value is now widely accepted as an appropriate standard for performance in U.S. business. That's what drives long-term stock performance and that's how we should manage. The key is to build the skill and to build the motivation to use shareholder value consistently and well. Only then will our organizations focus their attention and resources on the kinds of improvements that shareholders really value.

The value-added approach to financial measurement is consistent with this message. Although this quote is directed toward stock companies and our presentation to a large extent assumes a stock-company environment, the approach is applicable and can be tailored to mutual companies as well.

MR. JOHN C. R. HELE: As a way of background, I have used value added at Merrill Lynch to better understand the underlying profitability of our business. Statutory financial reporting and GAAP financial reporting, for a variety of reasons, had failed to help me do so.

The Merrill Lynch Insurance Group, Inc., a wholly owned subsidiary of Merrill Lynch & Co., Inc., has assets in excess of $12.5 billion in annuities, both fixed and variable, and life insurance, again in fixed and variable versions. We manufacture insurance products to be sold through our private client distribution network of over 10,000 financial consultants. I plan to cover the theory and implementation of value added from my experience as an actuary at Merrill Lynch.

We all understand the limitations of statutory accounting and that statutory results are misleading as a measure of performance. High sales volume can cause losses, whether profitable or not; high withdrawals can create gains; old high margin business can support new low margin business; and statutory accounting is primarily a balance-sheet approach. Yet statutory accounting determines solvency and, more important, ratings.

Turning to GAAP accounting, I think the accounting profession got the name right but added one too many letters. In other words: Is it GAAP reporting, or is it GAP reporting?

GAAP results are also misleading as a measure of performance. GAAP basically desensitizes the income statement because:

1. Assumptions have margins for adverse deviation;
2. Acquisition costs are not fully deferred, or too much is capitalized;
3. Earnings are dominated by in-force business; and
4. Required surplus is not reflected.

However, GAAP earnings are the public measure of performance. Speaking of performance, First Executive showed a GAAP profit in the fourth quarter of 1990.

So we turn to another way to measure performance. Value-added performance measurement has several advantages -- most of all, it works in a simple context:

1. Variances are measured against current assumptions;

2. Cash flows are discounted at the company's hurdle rate -- this is a discipline like no other;
3. Value added by new business is isolated -- this is the most important product of value added that we found;
4. Results can be directly linked with pricing;
5. Required surplus is reflected;
6. Results do not have to be disclosed publicly; and
7. Value added is an approximation to market value.

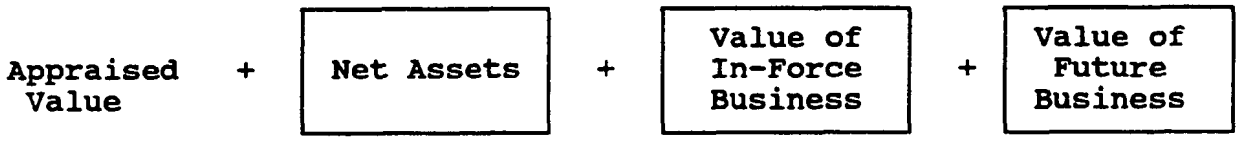
Value-added analysis is really an evaluation of the investment of capital in a product in terms of the rate of return and the incremental value added.

Pricing using value-added techniques allows you to:

1. Profit test new products by discounting after-tax distributable earnings at your firm's hurdle rate;
2. Encourage congruence of field force and corporate objectives; and
3. Add in all start-up costs.

Essentially it is a macrotechnique of Anderson book profit internal rate of return (IRR) for individual (micro) policies. Value added helps one look at the forest instead of the trees.

Theoretical Framework



The value of in-force business is the present value of future distributable earnings from in-force business discounted at the appropriate rate(s) using current best-estimate, going-concern assumptions.

The value of future business starts with value added from current sales, with a multiplier reflecting growth prospects, changing markets, and the market perception of goodwill value. Essentially, it is a calculation of goodwill.

The uses of the value-added methodology include the regular monitoring of increases in value, point estimates of market value, and incentive compensation. Embedded value can be used for published accounts to the board, as well as internal reports for business units. The appraised value is the basis for mergers and acquisitions.

Value-added methodology focuses on the discounted value of distributable earnings. So we need to first define the "discount rate," and then "distributable earnings."

The discount rate reflects the cost of capital of an organization. Typically, it ranges from 12 to 20%, the common average being 15%. Businesses with more risk, i.e., earnings volatility, tend to be at the higher end of the spectrum. To the extent mutuals need to access capital markets, they too will need to ascertain their cost of capital. At Merrill Lynch, we study the cost of capital closely, and have done quite a bit of work on insurance organizations. One common theory is that insurance companies, generally life and health as opposed to property/casualty or group health, can have a lower hurdle rate because the earnings are relatively stable.

To check this theory, we studied the beta of life and health company stocks, which if the theory were correct, should be lower than for financial service firms in general. A common view is that 15% is the benchmark for financial service firms, i.e., 15% or higher. What we found contradicted the stable price theory; we found that the life and health insurance company beta over five and ten years was as volatile as financial service firms (including Wall Street firms). Therefore, each company must carefully decide on its cost of capital hurdle rate, because it quantifies shareholders' performance for cash now over deferred costs, and compensates them for the risk that future profits will not match expectations. It is important to note that the discount rate varies by country, and may vary by line of business.

Distributable earnings reflect the after-tax statutory earnings less the increase in required surplus. The earnings include the after-tax investment income on assets backing required surplus. Distributable earnings are the amount available for dividends to stockholders from a business.

Perhaps Chart 1 will help. Think of the balance-sheet-required assets supporting statutory liabilities plus required surplus for solvency and rating agencies. Free assets match free surplus, i.e., the amount available for dividends, without impacting a rating.

Required surplus is necessary to demonstrate financial strength and is now much higher than it was in the past. This is very important to the return on capital because more capital is now needed, and with interest rates dropping, required surplus becomes more of a drag on the return from the policy itself.

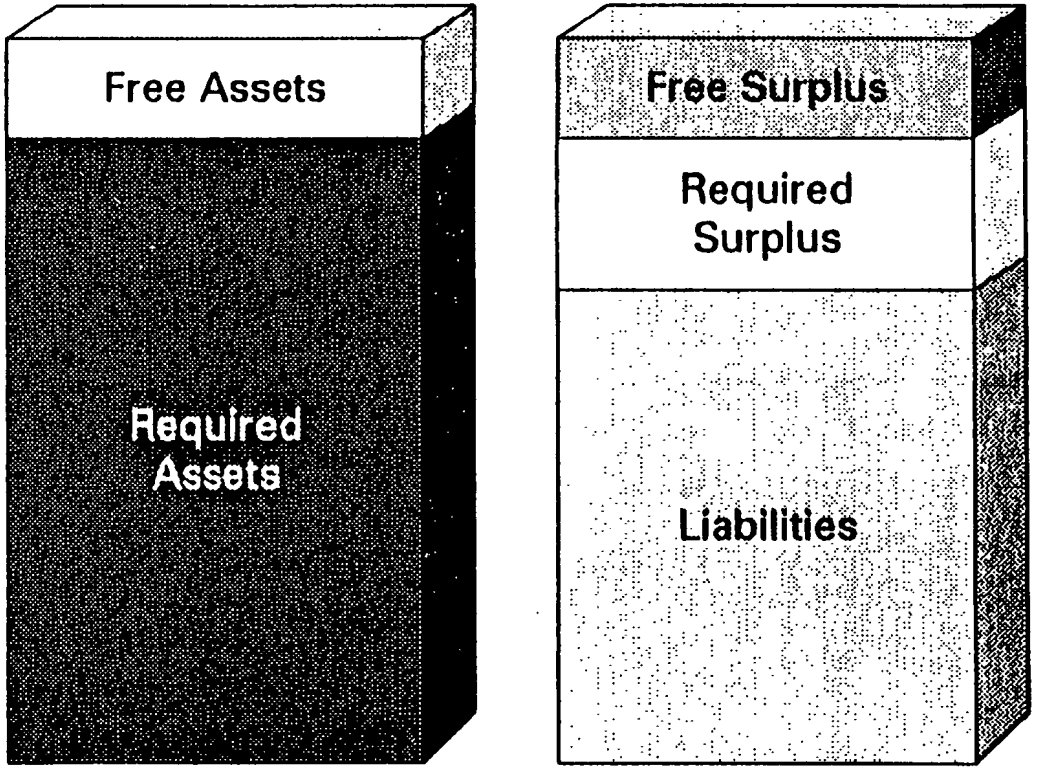
Implementation

The theory was relatively easy, now we have the more difficult (but fun) part. Calculating embedded value or an appraised value involves six stages:

1. Philosophy -- Choice of discount rates, etc.
2. Approach -- Method of computer modeling

CHART 1

Statutory Balance Sheet



3. Accuracy -- Validation of models
4. Assumptions -- Analysis of experience
5. Computation -- Discounting projected results
6. Monitoring -- Variance analysis, continuous feedback

The philosophy is by far the most important, and should be very time-consuming. If it is not, then the results may not meet expectations or reflect the reality of the marketplace. Discussions should be held not only with management, but also with key board members for the important items such as the discount rate and the overall rating desired (which determines the level of required surplus). Serious discussions need to be held on expense levels, inflation, new systems, and expense allocation. I believe only a fully costed system works, otherwise each business unit seems fine, but the overall organization never seems to hit the corporate objective.

A checklist of items to discuss would include:

1. Discount rates
2. Investment assumptions
3. Inflation assumptions
4. Future new business assumptions
5. Taxation
6. Definition of statutory earnings
7. Line-of-business definitions
8. Materiality levels
9. Expense allocation
10. Asset segmentation
11. Treatment of renewals/new business

12. Required surplus levels

13. Intercompany reinsurance

14. Treatment of negative free assets

15. Impact of planned corporate changes

16. Treatment of noninsurance subsidiaries

Speaking of expenses, many companies have expense overruns compared to pricing. Management often refers to this overrun as expenses that will be covered once the "economy of scale" is reached. After much research, I've developed a definition of economy of scale, and I find it applies to most businesses, even outside of the insurance world. My definition is: "Economy of scale is always at twice current volume." See if you hear this in your business the next time a computer proposal is put forth.

Once the assumptions are determined, modeling techniques need to be addressed. Many times, the foundation is already present in microform for pricing policies, or more often in macroform for budgeting and five-year plans.

Determining modeling techniques isn't usually the tough part; the toughest part and most important part of modeling is the accuracy and validation of the models. Errors in modeling are common and frequent, so it is critical to tie the models back to statutory statements for reserves, premiums, face amount, and statutory income. Go back one year and make sure your model ties to actual results. We went back three years to build our models. It was very time-consuming, but we have great confidence in our future projections. For minor lines, use approximate approaches.

Assumptions should include the current analysis of actual experience, including expenses, mortality/morbidity, persistency, interest (spread), conversions, and other important business

factors. Checks should be made against industry experience and should reflect expected future changes.

The actual computation of results must adjust for the market value of free assets, including capital gains tax adjustments. The value of in-force business is calculated as the discounted model projections plus a market value for nonmodeled lines. Finally, the value of future business is usually determined as the value of one year's business multiplied by a factor to reflect the discount rate and future assumed production.

Monitoring must be done on a regular basis for useful variance analysis and feedback on how well the organization is using (i.e., investing) shareholders' capital.

MS. GUINN: Embedded value analysis is a systematic approach to explaining the change in embedded value during the year. I was worth $200 at the beginning of the year, and I show I'm worth $230 at the end of the year. Embedded value analysis explains the change of $30, and in a sense is analogous to the statutory reconciliation of surplus. Recalling that embedded value is defined as, free assets plus net present value (the present value of expected future disputable earnings from in-force business), one can solve mathematically for the expected change in embedded value. The expected change is equal to (1) after-tax investment income on free assets plus (2) the planned return on in-force business (the hurdle rate times the value of in force at the beginning of the year) plus (3) the value of new business written during the year less (4) any expenses (e.g., overhead) not taken into account in the embedded value calculations. An example based on our case study follows.

The company's embedded value was $200 at the beginning of the year. It's after-tax return on free surplus was 1. The planned return on in-force business, at a 15% hurdle rate, was 27. New business written during the year was worth 14, at a 15% discount rate (note that implies that the inherent ROI in that business was more than 15%). Overhead expenses were not taken into account in the calculation in the beginning embedded value, therefore they must be

separately deducted; these expenses were 8. The expected embedded value at the end of the year is, therefore, (200+1+27+14-8) = 234. This represents an increase in value of 34 or a 17% rate of return for the year.

Oftentimes, a first view of analysis is confusing because one expects earnings to be one of the components of change in value. In a value-added framework the emergence of earnings (i.e., statutory earnings) do not change total value but merely represent a shift between free assets and net present value. If the embedded value calculations and analysis are organized by lines of business or profit centers and a corporate line (where the corporate function is principally capital management), then this shift is easier to see. Distributable earnings are basically amounts that are passed back and forth between corporate and the lines of business.

Let's return to the case study. This company is in three lines of business. Line of business A is its historic core business and is fairly mature. Line of business B is newer; the company started it five years ago. Line of business C is a new venture that has been started in the last year or two. The beginning of year embedded value of 200 was composed of 20 of free surplus that is held in the corporate account, and the net present value of 180 is held by lines of business A, B and C in amounts of 100, 60 and 20, respectively.

Based on this distribution, if the model was perfect and experience followed the assumptions, then the 17% aggregate rate of return for the company would have been composed of a 5% return on free surplus, 15% return on line A, and higher returns on lines B and C. The expected return on Line A is equal to the hurdle rate because the value of new business in line A (4), 15%, was exactly offset by the overhead allocated to the line. Lines of business B and C were expected to produce returns in excess of the hurdle rate because the value of new business was expected to exceed the overhead allocated to these lines.

Note that the return on the free surplus was only 5%. In order for the total company to return its hurdle rate of 15%, the lines of business have to do better than the hurdle rate if there is any free capital in the organization.

So much for simple examples. Let's turn to a more realistic example. In real life, neither will the model be perfect nor will the assumption exactly come to pass. We need to make changes to the embedded value analysis, to account for this. First, change "planned return" to contribution: contribution from in-force business and contribution from new business. Then, add a line for capital adjustments.

Discuss these changes. The contribution from in-force business has three components: (1) The planned return, as discussed earlier; (2) variances: the difference in actual versus assumed results; and (3) the impact of any assumption changes made during the year. Because our beginning value was the present value of expected distributable earnings based on a particular set of assumptions, any changes made in those assumptions during the year need to flow through the contribution from the in-force business. The contribution from new business can be broken down into these three components as well.

The capital adjustments line records capital transfers between the corporate line and the company's owner(s). The owner(s) could be another life insurance company, shareholders, a corporate parent or policyholders through the case study. Let's work these concepts through the case study. The company's embedded value was 200 at the beginning of the year. The contribution from in-force business was 20: a planned return of 27, variances of (5) and assumptions changes of (2). The contribution from new business was 10: a planned return of 14 and variances of (4). There was a capital adjustment of (5) because the company paid a dividend to its holding-company parent of 5. So the embedded value at the end of the year is now only 218 rather than 234 as it was in the simple example.

Note that an ending value of 218 does not imply that the increase in value ("value added") was 18 for a 9% return. The capital adjustment was a capital movement and needs to be reversed for purposes of calculating the value added and the return. Therefore, the value added was 23 (18 plus the dividend of 5) and the rate of return was 11.5% for the year.

Next, let's expand the analysis by lines of business and compare the actual rates of returns from lines A, B, and C to what was expected if there had been no variances or assumption changes. Line A performed well. Its actual return was 16% while the expected return was only 15%. Line B did not fare so well. A 20% return was expected but it only produced 12%. The source of the shortfall was twofold: variance and assumption changes made to in-force business. This may lead one to question whether line B's new business, which was valued at 6 is really worth 6.

MR. DOUGLAS C. KOLSRUD: Tricia went through a lot of material in a fairly short period of time. I've spent four years trying to explain those same concepts to some people, and they still don't understand them. So be patient, it's a complex system, and it takes some time to understand.

What I'm going to do is continue to build on Tricia's example by going more into the variances and the assumption changes that were being made. Before I do that, I'd like to tell you a little bit about who we are and our experience at Aegon USA with value added. I'm the corporate actuary with Aegon USA, a life insurance holding company made up of ten insurance companies. But more important we're organized on a business-unit basis, and are very decentralized. We have found this to be a useful management tool for us to understand what our different business units are doing, and use it as a central management tool to understand profitability of new business and deviations from expectations.

We have a little international flavor in that we're Dutch owned. Embedded value has been around in Europe for more years than in the U.S., and so these concepts are well-accepted by

our Dutch parent. We implemented value added in 1988. So we've been at it for four years. I'll tell a few war stories to give you a little bit of our own experiences with this system. In addition to using this as a management tool and analyzing our businesses, we also use it as a basis for our incentive compensation plan. That tends to get management's attention directly, and because of that, I think we've had management buy into the concept and people pay a little bit more attention because they have financial incentives to understand what's going on. But it has been an evolutionary process.

We started in 1988 with basically no models of our business in any of our business units. The first step was to build models. That took a lot of time and effort and we spent most of the first year or two finding out that we didn't have good models. After we got past the first couple years of refining the models and getting the kinks out of the system, the last couple of years we have been taking the concepts and trying to expand and refine them and we hope to make improvements in the information that we're giving to our senior management. With that background, I'm going to go a little bit more in depth about the variance analysis. This is an application of a basic accounting concept called standard cost accounting. In the general sense, a standard cost system sets standards of performance against which we can measure. You then try to measure your actual results and compare the two. You hope you will find out some things about your business, and because of that you then are in a position to take some corrective action. For life insurance, we take the distributable earnings and compare the actual distributable earnings as presented in our statutory financial statements and compare that against the expected distributable earnings as projected in our models. Also, we spend quite a bit of time analyzing in-force business versus new business. I think John touched on this a bit in that a key thing that you can get out of a value-added financial accounting system that you don't get out of GAAP or statutory is that it forces you to look at the profitability of your new business. Are you meeting the objectives that you have set? The analysis clearly shows whether you are or are not. The analysis is based upon a source-of-earnings approach similar to the typical statutory analysis of comparing bluebook pages five and six and analyzing the

source of earnings from interest mortality, morbidity, expenses, etc. We've taken this same concept but expanded it into a more analytical tool.

The final area I'll cover in this part of the presentation will be something unique to the value-added system in that you can not only have variances based upon the current year earnings but also you can have variances based upon the impact of experience on future years' earnings. I've got an example that will show that a little more clearly.

So again taking off on Tricia's example, the starting point when we're constructing a variance analysis is we put together a traditional financial statement. We compare the actual and the expected profit statement entries, but we don't find this very useful because you can't really perform a meaningful analysis of your business. For example, the "Benefits" category has the change in reserve flowing through it and so you have really no basis to understand if you're making your spreads, etc. In our case A, B, and C would be business units. You could do it by company. You may want to do it by product. But we tend to analyze everything by business unit. The key is not actually putting together the numbers, which after a while becomes fairly routine, but to sit back and understand why these numbers are what they are. In this particular example the largest variance is the interest-rate spread. And of course this is probably an example that never happens, but this company happens not to be making its interest spreads. One of the war stories that I can share with you is that in 1990, some of our management tools were telling us that we were making our interest spreads. We went through the value-added process and sure enough we got a different answer, to our surprise and to upper management's surprise. It made us spend many, many weeks trying to understand what the problem was. It happened to be a data problem in information that was flowing between the investment division and the annuity division. This has brought to the surface a key piece of information that we may have found out through other management information systems but this happened to be the one that brought it to the focal point.

Most of the action in the variance analysis is happening on the in-force business. But we also look at new business, and the typical variance you will find on your new business is that you've got acquisition expense overruns. One exception to that is a couple of years ago we found a mortality problem. It brought to the surface that the actual death claims we were having on a particular line of business were far more than what the model was expecting. Sure enough we had written a policy with a simplified application, and we were having a lot of early death claims. As we continued our investigation, there were other signs that were pointing towards the same result.

The first year we went through the value-added process, we did our gains-by-source analysis, but we did a more typical statutory analysis in that we matched premiums against premiums and commissions against commissions. I think intuitively we understood most of the reasons why we had variances. But we presented this to senior management, and we happened to have a significant premium variance that was causing variances in other numbers. Commissions were off because premiums were off. Premium taxes were off because premiums were off. We kept explaining the same variance over and over and over. We saw the need to come up with a better way of presentation, so we went to a rate and volume variance approach.

It's a concept that's probably in Accounting 101, but sometimes you'll find that simple concepts have not been applied to the life insurance industry in analyzing business. Some of the more vivid examples I can remember over the last few years is where we may have a negative total variance but the rate variance will be one direction and the volume variance will be a different direction. Another refinement in the process that we've made and gives us a little better picture of what's going on is, when we look at our total persistency variance, variances really come from two places. One is the impact, on a statutory basis, on the current year's earnings. For example, suppose we happen to have more lapses than what we expected. On a statutory distributable profit basis, a positive variance is generated. But in reality because you've had more lapses than what you expected, all future years are impacted in the value-added system and you have a negative future years' variance because of the loss of business. So when you

put these two together, you have a much different picture and one that's probably more intuitive in that the excess lapses deteriorated the value of your company. That may not be true with all businesses being designed, but in this case that's true. And so by looking at the net of the two, I think you get a better picture of what has happened to your company overall.

The next thing I want to cover is changes in assumptions. We've categorized changes in assumptions into two categories: changes in climate and changes in weather. Changes in climate are assumptions that we treat as assumptions that are beyond the control of management. They're something that management shouldn't be held accountable for. We treat these as midnight changes in that the value of our business units as of December 31 of one year may not be the same as the value at January 1 of the next year. Those differences never flow through what we call the value added. They're beyond the normal course of events or the management of the company.

Change-in-weather assumptions are assumptions that management can control, and we allow those to flow through the value added in the current year. We do isolate the impact of those changes and disclose those to management so it understands how much of the change in value is because of changing assumptions. I have examples of the two different kinds.

Midnight changes (and we've had more of these than what we would like because I think they're hard to explain to management) should be washed out of the change in value. The most common midnight change is a correction of errors. We have refined our models over the years, and as you find errors we try to be fair and not penalize management, normally they go in the wrong direction. Over the first couple of years you do spend a lot of time changing your numbers just because you've found problems with your models. And so we've tried to be fair and not penalize management for those.

We've had a few changes in methodology. An example would be going from a worksheet method to a computerized method. Another example would be a couple of years ago we went

from a deterministic to a stochastic process. Again there was a fairly substantial change in value by doing that. We found that traditional deterministic pricing tended to be on the optimistic side. Probably the most important change we've made in the methodology is, when we first started out, we didn't bring target surplus into the whole process as has been described here. In 1990, we integrated target surplus into the value-added process and greatly enhanced our analysis of profitability of our business. Last year we allowed some midnight changes because of deferred acquisition cost (DAC) tax. We went around on that one because we wanted to provide some incentive for some of our business units to price DAC tax into existing business going forward. And, of course, a change in the tax rate would be something that we would call a midnight change and would wash out of the value.

There are assumption changes that we do allow to flow through the value added during the year. Again these are assumptions that we think management can control. We should reward or penalize management for these changes. Probably the most common example is when you price a new product and you may have some aggressive assumptions built into it. After a couple of years you may have evidence that the assumptions are not going to be met. And so after a couple of years we would entertain the possibility of changing the assumptions to a more realistic basis than what was first used and then allow the negative impact flow through the year that we decided to change the assumptions. But we're careful in implementing such changes. We don't change assumptions based upon the last lapse study or interest-spread analysis. We try to really make sure that it's a change in the perception of the future.

MS. GUINN: In the other considerations we want to talk about two conceptual issues. I want to talk a little bit more about the things that John alluded to before and then close up with sort of some practical observations about the process of actually implementing a value-added system. It's another long list on the conceptual side. And there are lots of questions as to exactly how to implement this process. And your choices will have an impact both on the point estimates of value and your perception of value added or your rate of return.

In the early days of working with Doug we thought that what was important was the value added and that the point estimates were less important, and so we address some of these issues in that context. But pretty soon we found out that high up in the company people actually looked at this value and it's pretty natural that they believed that embedded value was a measure of the market value of the company, in stable, economic times. So once you get to the point that you believe the point estimates, the $200 or the $234, are important numbers, you should probably go back and revisit a lot of these issues and consider how to handle them. On expense overruns the issue is really to capitalize or not to capitalize. What are the pros and cons?

Well on the pro side it gives you a better or more realistic endpoint value. The negative is that perhaps you're giving the business units a license to spend that amount of money. And if you want to get them to the point of reduced expenses and you want some teeth in your mandate for reducing expenses, maybe you don't want to perpetuate expense overruns in the process.

Federal income taxes are really complex. And you know within an organization the tax issues will not only be the differences between tax and statutory reserves and DAC tax, but also there'll be things like alternative minimum tax (AMT), carryforwards or potential AMT issues in the future; loss carryforwards; maybe unamortized balances having to do with prior acquisitions; 338 elections; and these sorts of things. After working through this for several years, we think that it's best to try to uncover as many of those issues as you can and reflect them in the calculations. And what this leads you to is that the process of doing value added involves a lot more people than just the actuarial department of a company. It really needs to be a team effort involving people from the investment department, the actuarial department, corporate accounting, and the tax people. And getting all those people to put together this sort of analysis at a busy time of the year is not as easy as it might sound.

Our next issue is purchases or sales. Let's just take for example an acquisition. You've bought a company or a block of business this year. Although your hurdle rate is 12%, you've priced

this business at 15%. What do you do with that sort of difference in value for purposes of your value-added statement? Do you amortize it or do you recognize it this year? Each company will make its own decision, but some conceptual things to consider are that maybe in doing value added, what you've done is isolate two functions in the insurance company. One is to add value through current-year activities like writing new business or going out and making this acquisition. And the other way of adding value is through managing your in force. You have an asset called your in force. Manage it to its profitability. If you follow that approach, that would you lead you to go ahead and take the profit from the acquisition this year. And then measure that acquired business on a consistent basis with all your other business going forward.

Consider short-term versus long-term business. It's pretty easy to conceptualize this approach for long-term business like ordinary life insurance or annuities where current-year statutory earnings really don't give you a measure of the value of the business. It's pretty easy to split in-force business from new business with things like annuities or ordinary life. For other businesses like group health, it's much more difficult. And you need to think through the issues for, say, group health. Do you want to imply that that's more than a one-year business and to ascribe any future earnings to that business? Or do you want to treat it as a one-year business? The whole line of business is nothing but new sales each year. Skip capital gains a second and talk about debt versus equity. In some companies the parent will manage cash to its subsidiaries or capital contributions to its subsidiaries. Some of it will come as debt and some of it will come as equity. And if you are a subsidiary of this parent, the parent may want you to be neutral as to whether or not you get your capital as debt versus equity. And this whole debt versus equity issue may really be a parent company issue of trying to manage cost of capital and manage tax liabilities. If you want to be neutral as to debt versus equity, then in doing your value added and calculating your free net worth, you need to consider the debt as capital and treat any interest payments you might make on debt as shareholder dividends.

Uniform discount rates are another area for consideration. You may have three different lines of business, say, home service life insurance versus annuities, sold through stock brokers

versus, say, long-term care business. Do you use the same hurdle rate for all three businesses, or do you assign them their own distinct hurdle rates? For simplicity's sake, in analyzing the results at a high level, it's probably easier to use a single discount rate across all the lines of business. However, in managing each one of those businesses, you may want to give them distinct hurdle-rate targets. John mentioned noninsurance business. If you have an investment management business or a leasing company or a travel agency, it needs to be taken into account in the process and on as consistent a basis as you can, as you're measuring your insurance businesses.

Let's not forget capital gains. Let's say you've got a GIC portfolio that's exactly matched, and you've got 9% assets backing that. Interest rates fall and those bonds are trading above par. And you take the gain. Well conceptually as actuaries, you know that you had just the right amount of assets to match that liability. This gain is sort of not really a gain because you're going to need it in the future to fund the liabilities. Because they're still out there at 9%. My point about capital gains is that there has to be integration between the net worth calculations and the discounting distributable earnings calculations.

I can now get practical. As Doug and John have both mentioned, you need a projection model. And given all the other types of jobs that actuaries are doing now, more companies are going to be having these models in place and up and running. John mentioned subjective assumptions. It's important to realize that there is a range of reasonableness around just about every assumption. It's kind of useful in doing this process when incentive plans are tied to the value added because you get this sort of tension on assumptions to come home to play to your business-unit people. It's real easy for people to think just naturally that their line of business is worth a lot. Well how do you get the line of business to be worth a lot? You use really aggressive assumptions. But when you measure going forward, you actually want conservative assumptions so that the releases from margins will give you good returns in the future.

So built in to the process will be some inherent biases that people want conservative assumptions and aggressive assumptions at the same time. Maybe it makes the choice of a reasonable assumptions a little bit easier that way. I think the point that Doug made about keeping the assumptions steady and trying to change assumptions only when you feel there is a true change in your outlook for the future is also very important. Competition for resources and time conflicts. I've been working with Doug most of these four years on his company's value-added process, and I think the deadline gets moved up each year. And it gets to a point where these numbers are wanted at the same time that statutory results, Dutch results and maybe GAAP results are due as well. And there's a real conflict for resources among various projects that has to be managed. And it's nice to get the value-added results out as early as possible so that the information that's being brought to senior management is still fresh and it doesn't get stale.

FROM THE FLOOR: I have two questions. The first one is that in determining the embedded value you are taking the present value of all the future earnings. Now in determining those earnings you are taking into account the requirement for the required surplus. If the purpose is to establish the present value of all the future profits, why do you have to bring in the allocation of the increase in the required surplus? And the second question is from the Canadian perspective. As you know in Canada the required valuation method will be the policy premium method (PPM). Now under the PPM you are bringing in all the further cash flow explicitly. That benefits everything else. Now if you were to perform a PPM valuation on the best estimate basis with total surplus at the valuation date and the increase in this surplus that you'll get year after year, will that give you a proper measure for the embedded value?

MS. GUINN: I'll take a crack at point number one and let somebody try to remember point number two. The first question as I understood it was, why are we discounting target surplus? Well, I'd answer it this way, that opening value is meant to be a total value that has a chance at earning the hurdle rate going forward. That target surplus on its own is invested out in bonds and mortgages that have a yield inherent of let's say 7% after tax. We're looking at

distributable earnings and discounting distributable earnings so that we're taking into account the natural haircut on those assets to get them to yield our hurdle rate of 15%.

MR. HELE: I also think that either for a whole company or for a whole line of business a certain amount of capital has to be invested in that business. And it's just an IRR calculation. I've invested so much capital. I must determine what capital I can take out year by year in the future, and I must remember that I can't take out required surplus.

MR. KOLSRUD: I'm going to say something about question number one because I have no idea on question number two. I agree with John in that we don't think of the target surplus as being any different in this system than statutory reserves. To us it's as tied up in that business and not available for doing anything else as the reserves are, and so we treat it as such.

MS. GUINN: John is Canadian. I'm going to stick him with number two.

MR. HELE: I'll think about my Canadian actuarial requirements. I think it's pretty close in terms of the increase in your surplus from this method. There's a provision for average deviations in statutory reserving in Canada, and that will come out over time. I'm really not up on it that much. How's that for a nonanswer.

MS. GUINN: I think there's also a difference in the discount rate. The PPM method is going to produce reserves, and therefore a surplus is based on an earned rate of interest for the discount rate, whereas value added uses a hurdle rate.

MR. STEVEN A. SMITH: I also have two questions. First of all with regard to the midnight changes, do you restate prior quarters or years or do you do the changes prospectively? Which way is the better way to do it, and are there advantages or disadvantages to doing it either way?

MR. KOLSRUD: As far as midnight changes are concerned, we just restate the opening balance sheet.

MR. SMITH: Well how do you compare then to the prior quarter's value and the quarter before that?

MR. KOLSRUD: We don't compare values, we look at value added. So as long as we do the beginning and the end of the year on the same basis we feel that the value added is not significantly different than what the new assumptions would show.

MR. SMITH: But over a course of five years there are a lot of changes that will get built in. If you're trying to say 1991 was a better year than 1988, if you just do it within one year you know what happened in that one year. But you really make comparisons to prior years unless you go back and restate them.

MS. GUINN: Well, if the midnight changes are because of errors I'd agree with you, you need to bring them into prior periods. If they're the midnight changes that Doug was talking about that are sort of beyond management's control, they're real changes as far as your owner is concerned. But in comparing whether your CEO did as good a year as another, they're properly left out. If the midnight changes are because my model was wrong, restating would be useful.

MR. KOLSRUD: We have looked at that when we first started doing assumption changes. We found that, if you make the same error at the beginning and the end of the year, many times the value added isn't impacted as much as you think. But your point is well-taken. If you're making errors, you should look back and try to see truly what you thought management had done for that year.

MR. SMITH: Therefore you need to save all the old models so you can rerun them. How do we tend to look at the projected growth of GAAP earnings over the next five or ten years? To what extent do you also do projected value added and look at the growth in value as compared with the growth in earnings?

MR. KOLSRUD: We're going to start budgeting and projecting value added next year. We haven't done it up until now, but we feel it's important enough. It's one of the questions the board asks when we present our budget: What's the impact on value added or ROI? And so we're taking that next step to start projecting value addeds.

MR. S. MICHAEL MCLAUGHLIN: I have a question only on overhead expenses. What you've actually done is moved overhead expenses out of corporate and then into lines A, B, and C. And it seems to me that, if these really are corporate expenses, they ought to stay in corporate and so then you see how your corporate line of business was doing for itself. And then, if they belong to a line of business, you should then unitize those expenses and allocate them into your line of business. And so project forward whatever unit expenses you get many years forward, which needless to say, would have a multiplied effect on your value because you'd then be present valuing many years' worth of expenses instead of just one year. And it seems to me like both of those changes would reduce your rate of return. Do you think that's something that ought to be done?

MS. GUINN: Well, I don't have a yes or no answer unfortunately. When I talked about whether, in doing your value added, your focus was going to be on the value added or the endpoints, overhead expenses are clearly one of the areas to be addressed. In our early thinking overhead was viewed as a bad thing, and we didn't want to capitalize it and reduce the value for many years of overhead expenses, because it gives the company sort of a license to spend that amount of money. But in real life the overhead is there and will be kept, I mean there will be overhead on into the future. So current thinking is moving toward capitalizing those expenses. Now with respect to keeping them in corporate versus allocating them out to lines

of business, I think it has to do with the relationship of the overall hurdle rate for the organization and the target you give the business units. I mean you don't actually have to allocate out the overhead if you've told the business units that you need them to price their business for a higher rate of return that gives you some cushion to pay for those overhead expenses. So I think there are various approaches that will work.

MR. HELE: We are very much of the school of fully allocating right to every business unit. Now even though you're not, and you can't control it, overhead is the cost of being in business. Pricing returns are set assuming so many cents on every dollar we spend is an overhead factor that's just ascribed to us.

MR. KOLSRUD: We take a different approach. We allocate corporate expenses that are more directly related to the business, e.g., general-ledger processing. But there are corporate expenses that we keep at the corporate level, more for political reasons than anything else. Our divisions have enough things to yell at corporate about so that we don't want them to be arguing about our expenses. Up until now we had taken a slightly different approach in that we kept corporate overhead in the corporate column, but each year it was dragging down our return because there was no provision made for it in the value. We're leaning towards an approach that would set up some level of corporate overhead in the future, a projected corporate overhead against which we can measure actual corporate overhead to see if corporate is living within its guidelines or not going beyond where it should.