1999 Valuation Actuary Symposium
September 23–24, 1999
Los Angeles, California

Session 7PD
Role of the Corporate Actuary

Moderator: Yiji L. Starr
Panelists: Barry L. Shemin
Yvonne Rae McCullough
Mark A. Milton
Shirley Hwei-Chung Shao
Recorder: Marc-André Melançon

Everyone knows what a corporate actuary is, or do they? There are a number of functions that might be expected to fall within the corporate actuary's role, such as research, providing actuarial resource to subsidiaries, interfacing with industry and/or regulatory bodies, and appointed actuarial work. However, in actual practice there is considerable variation from company to company.

The workshop is intended to address the following questions:
- *What are variations in corporate actuarial functions?*
- *What place do corporate actuaries have in their company's management structure?*
- *What factors and objectives drive these variations?*
- *What makes for an effective corporate actuarial function?*
- *What are the trends in the role of the corporate actuary and what drives them?*

MS. YIJI S. STARR: Many companies are undergoing reorganization. I think it's a very current topic. People might want to review the role of a corporate actuary, and I have assembled a very good panel.

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They will discuss a little bit of the corporate functions in their companies as well as what the role of the corporate actuary is within those functions. The representatives of companies vary greatly by size, by structure, mutual company versus public company, geographic locations (East Coast, Midwest, and so on), so I hope you'll get a flavor of the variety involved.

I'm going to go ahead and introduce all four speakers. The first is Barry Shemin, senior vice president and corporate actuary at John Hancock. The second is Yvonne McCullough, actuarial officer at Nationwide Financial Services. The third is Mark Milton, vice president and associate actuary at Kansas City Life. Fourth is Shirley Hwei-Chung Shao, vice president and associate actuary at Prudential Insurance Company.

MR. BARRY L. SHEMIN: In order to talk about the role of the corporate actuary, I'd like to describe how John Hancock organizes its actuarial functions across the company, and what the role of the corporate actuary is for most of them. I will go into detail on a couple of them, and will also touch on a couple of trends.

The first thing to observe about the organization of actuarial work at John Hancock is that it is highly decentralized. We have about 80 FSAs of whom four are in the corporate actuarial department, including myself. One result of this is that the work that's directly under the corporate actuary's supervision mostly involves reviewing the work of actuaries in other units. As a joke, I say we never do anything original. We just review the work of other actuaries. That's not entirely true, but it's pretty close. Another implication of that is that the work of the corporate actuarial staff has to be very highly leveraged in order to provide adequate coverage across the company.

The actuarial work units are mostly involved with either product development or financial reporting. The product development units are a bit more decentralized, mostly along product lines, but to some extent, they are aligned with certain channels. The idea of this decentralization is to have the people designing the product as close as possible to the market. The financial units are aligned with the major organizational business units of the company. The idea here is to have specialized financial knowledge to analyze results and to feed back into the product pricing process.

In addition, there are a couple of units dealing with the channel financial functions of agency and direct distribution and an asset/liability management unit. About half the staff is actuaries. Our non-U.S. companies have their own actuarial staffs, and we have a regional international staff as well.

Before describing the functions performed by the corporate actuary, I thought I'd take a direct stab at the title of this session, "What is the Corporate Actuary's Role?" I think there are several roles. Quite often the role is one of enforcing actuarial standards and the client here is really top management rather than the people that you're actually working with. We're often trying to facilitate or coordinate activities voluntarily among actuaries throughout the company or to act as a source of expertise. Finally, when something goes wrong, we're often called in to try to help figure out what's happening and to help put out the fire, no matter where in the company the fire might have been generated.

One of the most interesting challenges is the need to play these different roles at different times in relation to the same people. It's not uncommon for the actuaries in business units to think we're playing the enforcer, even though our objective at that moment might be to facilitate or to provide consulting advice. Of course, what we really want is for others to think we're providing advice when, in fact, we're enforcing, but that only works one time.

The major corporate actuarial functions are listed below:

- Reserves (including Opinion, AAT)
- Target Capital and ROE standards
- Pricing Oversight
- Financial Reviews
- Reinsurance Expertise
- Actuarial Development Program
- Actuarial Coordination
- Other (varied)

I'm going to cover reserves and pricing oversight in more depth later. I'm going to focus on the others pretty much in order.

Hancock's financial management process includes consistent definitions of target capital and ROE standards, and they apply to both pricing and measurement of current earnings performance. The corporate actuarial department is responsible for maintaining and updating these definitions and standards. The update process is fairly routine for some items. Every year we update the C-1 component of the target surplus factors to reflect the changing investment mix, but on some of the others, there will be significant discussion before we change one of the measurement items. We recently revised our product hurdle rates, and there was quite a bit of discussion that went into that.

I participate in the quarterly financial reviews. That's the fourth item on the list of each business unit's performance. It happens to be where the volunteer fire fighting originates. I also participate in supplemental reviews and annual planning sessions. My department provides reinsurance expertise to the business units on a consulting basis, but recent developments in the reinsurance area have resulted in our being asked to probably assume more of a control role in the future. We supervise the Actuarial Development Program, and we have a program to coordinate FSA compensation and promotion. We also do anything else that anyone with influence or a good argument asks us to do, such as help the company demutualize, study the financial structure of our benefit plans, evaluate bizarre tax savings ideas, or help provide financial underpinnings for a capital project review mechanism that's being installed.

I'd like to go a bit more deeply into our responsibilities for reserves because it uses substantial resources, and it results in a direct opinion in my capacity as an appointed actuary. I thought I'd cover this by describing the process that we go through every year. I should mention, as background, that the actual calculation of reserves and the actual cash-flow testing projections are done by the actuaries in the financial units, so the corporate role is one of planning, and standard setting, review, and sign-off.

The process starts with a series of meetings with each unit's financial actuaries to discuss what's going to change for the current year. Here we focus on new products, new actuarial guidelines or other standards, changes in assumptions, methodologies, or computer systems. Systems are particularly important because the results get driven by what system they're coming out of. Where there is substantial change occurring, we may start by having these meetings with a particular line in the spring, but they usually start in the fall. As part of this phase, we also meet with the actuaries from our outside audit firm to share our plans and to discuss their audit plans, which will include their actuarial and audit teams doing sampling and reserve checking. We don't actually do that part of it; we rely on our audit firm to do that.

Then, in December, we try to have the cash-flow testing projections as of September 30 completed. We don't always get them done in December, but one year I decided it would be a good idea to get these done in December, just in case we actually had to set-up extra reserves, it would be nice to know that before the last date the accountants set as the date on which I can change anything on the printed statements. We do come pretty close to completing the September 30 projections in December. We have a round of meetings with each of the business units to decide if additional reserves will be necessary.

After the year-end, we gather all the reserve information from the business units and submit it for the annual statement. At this time, we will also look at sensitivity tests in the asset adequacy testing framework and December 31 cash-flow-test updates. Once this is complete, the emphasis shifts to documentation to meet the various regulatory deadlines. Throughout the year, we'll respond to any regulatory requests that might come up.

I don't think the reserve process that I've just described is all that unusual, particularly for a large company, but I do think that our responsibilities for pricing might be a bit more uncommon. We have a company-wide process, whereby corporate actuarial reviews the pricing that is done by the product development units. We do these pricing reviews by starting with the pricing documentation package, which I think would be a fairly standard package that pricing actuaries would produce. We then go off and have some discussions with the actuaries that did the work.

We may bring in outside expertise, as necessary, and then write up a report summarizing our review.

The emphasis in these reviews is on disclosure of the product's financial performance, not on enforcement of financial standards. In other words, it's okay for a product to have an ROE that's below our target for that product, as long as management knows about it and makes a conscious decision to that effect. I don't know whether you'd be astonished to know that we have some of those. What's not okay is to think that the product is earning its hurdle rate, only to find out later, when experience actually came in at a very reasonable level, that maybe some of the assumptions were overly optimistic, and the product really was priced below where management thought it was. So we're trying to disclose what our products are expected to earn, rather than say they must earn X percent.

Most of the time, these pricing reviews occur after the fact in order to avoid slowing down the product development process, which I think, as you all know, has an immense amount of time pressure associated with it. Sometimes, however, we do review the pricing before a product is introduced if it has new or unusual characteristics. Sometimes we'll review a particular feature of a product that's about to be introduced because the feature is brand new. When we're considering insurance acquisitions, we'll virtually always review those as part of an acquisition team. In addition, we have annual reviews of nonguaranteed elements, which is renewal pricing for some of our products, particularly the ones that are covered by the opinion in this regard.

We also have a series of meetings with the chief financial officer, to whom I report, and with the business units. We review the current pricing status of all of our products, not just those that are getting repriced. That means we look at current estimates of their returns. We look at what we thought it would earn when we priced it, and if experience has changed, what do we think new issues of that product will earn going forward? What are the experience trends and our repricing and product development plans for the upcoming year? This review, which takes a series of meetings with different product and business people, has actually been as educational for the product people who present most of it as it has been for the CFO and myself.

I'd like to wrap-up just by mentioning a couple of trends that have been occurring at John Hancock. The first is an increasing emphasis on GAAP measurements. This, obviously, has a lot to do with the fact we're going public in a few months, but it had started to occur even before that decision was made. The use of GAAP measurements in pricing decisions is one that is still evolving. We have a project going on now in which we're trying to start by developing GAAP information for our products on the same basis as a statutory asset share information is typically made available. It's something we had not done as a mutual company, even though we were doing GAAP measurements of the business in force. If you asked a pricing person what the GAAP earnings on his or new product was going to look like, he or she wouldn't have had the foggiest idea. We're actually finding it's fairly difficult to start to do that for all of our products. There are some software issues as well as some definitional issues. So that's one that's still evolving. I'd actually be interested in any thoughts anybody else has about what some important measurements or uses of those measurements might be.

A second trend involves resource constraints. We, like others, are trying to reduce overhead and the corporate actuarial function is as much about overhead as you can get. We have reduced our own staff size, but we do have a budget to bring in consultants in case we need some specific expertise or even if we just need a body.

MS. YVONNE RAE MCCULLOUGH: As Yiji stated in her introductory remarks, I work in the corporate actuarial area of Nationwide Financial. Nationwide Financial is a stock company, although 80% of the stock is owned by our mutual parent, Nationwide Insurance.

Our entire actuarial staff numbers about 185 with 17 in the corporate area. We have a total of 35 FSAs in the company and four in the corporate area.

Chart 1 shows all of our product areas. Each of these departments support the product development and financial reporting for a group of products. We offer a wide variety of products and their support is organized into the following areas: agency life for traditional and universal life sold through our agents; brokerage life for universal life and variable life sold through independent distributors; fixed annuities; variable annuities; public sector or 457 plans for public

employees; private pensions; and income products and services, which support the immediate annuity products.

We also have two actuarial areas at the corporate level. There's the asset/liability management (ALM) department and the department that is actually called corporate actuarial. These two areas used to be one big department until a couple of years ago when it was decided that there was enough ALM work to justify a whole department being devoted to it and that work was split off from all of the other corporate work.

The corporate roles that I intend to delve into are the appointed actuarial work and surplus adequacy analysis because that's what I know the most about.

I also wanted to mention a few other areas that our corporate actuarial department gets involved in. One of the more important areas is allocation. Some of the major items that need to be allocated are required surplus and taxes. Since we have used a synthetic segmentation method of investments, we also need to allocate investment income, default risk charges, and Interest Maintenance Reserve (IMR). We also do some research into topics such as new accounting bases and theoretical surplus needs. Our corporate actuary tends to get involved with reinsurance issues and tax planning, particularly if reserving methodologies are involved. We also play a role in evaluating potential acquisitions, usually performing due diligence and sometimes estimating an appraisal value for a block or a company.

One of the areas I'd like to discuss in a little detail is the appointed actuary work, also known as reserve adequacy analysis. This includes, of course, the actuarial opinion and memorandum. I have been told that we have taken a rather unique approach to this process in that all of the model building, projections, and analysis have been centralized within the corporate area.

Why did we take this approach? Well, it sort of evolved that way. Our appointed actuary, who is also our corporate actuary, chose to develop a projection system in-house rather than purchase one of the vendor systems that were available in the early days of the New York 126 regulation. As you can imagine, this system development required some significant resources, and the

appointed actuary was in the best position to devote those resources to it. The corporate area had no quarterly financial reporting obligations and no product development deadlines to deal with. The product areas really had no interest in doing the work themselves, partly because of those responsibilities that I've just mentioned. The corporate area had both the interest and the resources.

The projection tool was developed within the corporate area. The expertise for using that tool, and, to a certain degree, the modeling expertise also developed within the corporate area. It was only logical to centralize the reserve adequacy testing process and the corporate area became sort of the model keepers.

The way this process has worked is the corporate actuary would generate the scenarios that we wanted to test. We would gather the liability data sometimes directly from the administration systems in an electronic format and sometimes in a summarized form from the product actuaries, depending on which line of business and which administration system was involved. We would gather asset data from the investment accounting system and model it ourselves. Since we were using an internally developed projection system, all of this gathered data would be put together into product models within the corporate department. We were most familiar with the system and how to get the data into it so that it would work correctly. We would then use these models to project and analyze the results. This analysis inevitably resulted in revisions to the models, further projections, and further analysis. We would iterate through this cycle until the corporate actuary was satisfied or time ran out. As time runs out, the appointed actuary becomes easier to satisfy.

Some of the advantages of this centralized approach include the following. One is consistency in projection assumptions and approach. Examples of what I mean by *consistency* are using the same scenarios for every product and modeling assets, including default rates, the same way in all the models. That sounds obvious, but it doesn't always happen that way if you have several different people doing their own modeling. Another advantage is you get a faster response time. For example, when you're in the office at 7:30 p.m. on Valentine's Day, and you discover an error in your default rate, which affects all of your models, it can be corrected immediately across

the board. Projections can be completed overnight instead of waiting until the next day to contact everyone who built their own model, and then communicate the error and wait for them to fix it.

The third advantage is you can achieve some cross-line synergies. We can compare and contrast the results of various products, which might lead us to wonder why similar products behave differently under a particular scenario. Sometimes this type of analysis results in an improved model, and sometimes it results in improved understanding, but both of those are good results.

A fourth advantage is you can also advance the model a little more quickly. What you learn from the model of one product is often applicable to the model of other products. Improvements are more easily made across the board if they are all implemented by the same area. This is also facilitated by the fact that the model is such a high priority for the corporate area.

Advantage five is, since the model resides in one central location, it's readily available for other potential applications. The final advantage is additional sets of eyes are reviewing the products, including the risks, the profitability, and the policyholder behavior in different situations. This should help to guard against unwelcome surprises.

Of course, the centralized approach isn't perfect. It has some disadvantages as well. One, the expertise for building and using the model is concentrated in the corporate area. This means that the product actuaries who are doing the pricing and financial planning are not using this model in those processes. Perhaps they are not using any dynamic model at all. It also leads to a disconnection between the product expertise and the modeling or projecting expertise. In the extreme, the people who understand all of the nuances of the product don't necessarily know how to model and project them, and the people who know how to model don't necessarily understand the products completely. Not surprisingly, the model lacks credibility outside of the corporate area.

Finally, there is what I'll call the inbreeding effect. The people in the corporate area get kind of set in their ways and don't get the benefit of seeing how other people might handle a particular

problem. It's kind of the flip side of consistency. It's still desirable to have consistency. However, if you begin with a diversity of ideas and reach a consensus about what the best answer is— instead of just having the corporate area do what they've done all along—then the modeling capability of the company should be improved.

Being well aware of both the advantages and the disadvantages of our past practices, we're making some changes at Nationwide Financial. First, we're now using vendor software instead of our old home grown system, and this makes it easier for a larger number of people to learn how to use it. We're moving towards something that we call a Base Model concept. The Base Model is intended to be the single source for all application models. Examples of application models would be the reserve adequacy model, the pricing models, the ALM models, and the financial planning model.

The Base Model will reside on a central repository and everyone in the actuarial office has access to it. It is populated by experts. The product actuaries model the liabilities. The investment department models the assets—both existing and future purchase prototypes. The corporate area's role is to define the framework and the structure for the Base Model and to make sure that the models are constructed in a consistent manner. This platform will take advantage of the relative strengths of each of the actuarial areas. Over time, everyone should get a little cross training.

Under this structure, reserve adequacy testing is simply an application for which the corporate actuarial area has responsibility. So the corporate department will start with the Base Model, modify any inappropriate assumptions, project the revised models, and analyze results. The projections and analysis are still centralized within the corporate department. A similar process would occur for any application. The department with responsibility for it starts the Base Model, modifies assumptions, and does its analysis. I want to emphasize the fact that we're not using the same model for every application. We're simply starting from the same point to build a model for every application.

Implemented correctly, this structure should address the disadvantages that I mentioned earlier. The product experts will build the model, so it should have plenty of credibility and be used with appropriate modifications for all applications. With so many more people involved with the modeling process, there is definitely sufficient diversity of ideas. Since the actual reserve adequacy testing projections and analysis are still centralized, we also retain the advantages of a centralized methodology.

The other corporate role that I want to discuss is surplus adequacy analysis. In case some of you are unfamiliar with the concept of surplus adequacy analysis, I'll just briefly summarize what's involved here. First, you project surplus. To do that, you need to have your starting surplus, periodic product gains, and an assumption as to what rate of interest your accumulated surplus will earn. Then you choose a required surplus formula. You could choose a formula defined by one of the rating agencies, the NAIC formula, or you could define your own. We used to use the Moody's formula because it was relatively conservative, but we've moved to a multiple of the NAIC formula. At the same time, one of our research projects is to derive a more theoretically justifiable formula of our own.

Once you've chosen the formula, you need to project the required surplus based on assumptions consistent with those used to project surplus. In other words, you want to use the same reserve growth and the same in-force growth to project both your surplus and your required surplus. You simply compare your projected surplus to your projected required surplus. Obviously, you'd like your surplus to be higher in every period. Usually, this is an intermediate term projection.

We project for five years. You want to project for a long enough period of time to allow you to respond to any potential inadequacies, but predicting growth levels beyond a couple of years into the future gets to be pretty challenging and not really very credible.

The way we've handled this process so far is to have the product actuaries project the results of their products independently. We couldn't use our reserve adequacy model because it didn't include new business and, in fact, our home grown system didn't even handle new business very well since it was essentially written for reserve adequacy testing. The product areas pass the

results of their independent projections to the corporate area in a predefined format that contains enough detail to allow us to calculate required surplus for each period. The corporate area would then aggregate the results and derive the surplus and required surplus effects. In addition to the inherent logic of having the corporate area perform those last aggregation steps, it also ensures that the required surplus formula gets applied consistently across all of the products and the same surplus earnings rate is used by everybody.

But with our transition to the base model structure that I just discussed and our use of vendor software, the surplus adequacy analysis process will also change. It becomes just one more application, and it's handled similarly to reserve adequacy testing in that you would derive a model to project surplus from your base model. The product actuaries will simply need to provide assumptions for new business levels, and then the corporate actuarial area can start with the base model and the new business, revise assumptions as needed and project, including surplus and required surplus effects. This should be an improvement over the previous methodology in that we can ensure that a consistent economic scenario is used for all of the products. The process should be somewhat streamlined, allowing us to project many more scenarios than we've been able to in the past.

It should be clear that our corporate actuarial role at Nationwide Financial is in a state of transition, at least for the projection-type applications that I wanted to discuss. In many ways, our old methods were easier. It's often easier to just do the work yourself than to try to coordinate a bunch of other people doing it. We believe that our new methodology will produce more realistic and reliable results for all applications; hopefully, it will be worth the effort.

MR. MARK A. MILTON: I am not the corporate actuary. In fact, Kansas City Life doesn't really have a formal corporate actuarial position. I did have to go around and take a survey of my coworkers as we tried to figure out exactly who this person was. We do, however, recognize the importance of corporate actuarial type projects and, in fact, we recognize an increasing importance in today's environment and the world we live in. What I'm going to talk about is how Kansas City Life, a mid-size insurer, approaches these corporate actuarial projects.

I'm going to give an overview of Kansas City Life and describe the organization of the actuarial function. I'll talk about some specific corporate actuarial projects and then provide a summary and conclusions on our overall effectiveness of dealing with these projects.

Kansas City Life was founded in 1895, so we're over a 100 years old. We have $3.6 billion worth of assets. We have two subsidiary companies. Each company has its own unique marketing department, its own unique markets it targets, as well as its own unique distribution systems. The back room operations of each of the companies are consolidated with Kansas City Life. We are a stock company, but the majority of the stock is owned by one extended family, and I think that fact drives a lot of the importance of the corporate actuarial projects for our company. We're doing very well by most traditional growth measures. The corporate actuarial projects that I'm going to talk about in a minute are there to assure that we have future growth in both earnings and revenue in the future.

The top issues facing our company include profitable growth by generating new sales as well as growth through acquisitions, effectively managing our distribution systems, determining appropriate performance measures, expense management and last, but not least, risk management.

I'm sure probably everyone in this session has the same list of issues facing his or her company. I'd be surprised if any of you don't, and you may have a few more on your list. But we see that the corporate actuarial role is very critical for many of these, particularly in acquisitions and in developing new performance measures for the company, expense management, and risk management. I'm going to spend a little bit more time on these areas throughout the presentation.

Our company and the actuarial department is organized functionally (Chart 2). We have areas of product development, asset/liability management. We have a systems and support area as well as financial reporting and valuation.

The corporate actuarial projects that I'm going to talk about include acquisitions. I'm going to give you a little bit of background on how we do asset/liability management. I'll talk about value-added financial analysis. I'll talk about a project that is fairly new at Kansas City Life, and that's the development of expense allowances based on our pricing allowances and breaking those allowances down by department.

There are several areas that I'm not going to take time to talk about, but these are also important corporate projects. These include rating agency support, strategic planning, risk analysis, and the development of a data warehouse. This last issue is something that has really came about on its own in the last several months. We have created a data warehouse of actuarial information to be used by members of the actuarial department, and we recently began to expand it to be used by other areas of the company.

My perspectives may be a little bit different from those of the rest of the panel, due to our size. As a medium-sized company, there are several advantages and disadvantages. My company has ten actuaries listed in the 1999 directory, and if you take an average of the number of actuaries at the other three panelists' companies, there'd be somewhere near 100. One of the biggest challenges that we have is how to deal with these very important corporate projects that we find extremely important. It's not always as urgent as the need to get the latest product out on the street or to finish the quarterly statement work. We've adopted a team-based approach to attack these corporate projects.

The first thing I'd like to talk about is acquisitions. Acquisitions are one of our approaches to achieving the profitable growth that I mentioned before. Kansas City Life has historically grown through acquisitions. We've acquired companies with ongoing marketing arms and done some consolidation of the back room functions. We believe that has helped us eliminate excess capacity in our company and improve economies of scale. We've also acquired blocks of business to administer and that is also going well. In the last year, we divested a block of home health care business, allowing us to better focus on our core lines. We continue to look for good opportunities to grow on a profitable basis through acquisitions in the future.

How do we do this? I'm going to refer back to the original organizational chart shown in Chart 2. All the actuarial departments get involved in acquisitions. Everyone gets involved in a department our size by doing acquisitions and different people get involved at different phases. At the top levels, we have our chief actuary and me who would be involved in helping set direction for the company. We may analyze our funding capabilities and deal with a lot of corporate cultural issues that would be associated with doing acquisitions. We also have staffs that are busy identifying potential candidates for acquisition. Once a candidate has been identified, there's a team of people who would do a preliminary assessment that would involve not only a strategic assessment, but also operational issues to determine whether we really have a fit. Finally, there's a group that would be analyzing a price range that would be appropriate.

Another area that's important in doing acquisitions is providing support for the decision-making process. We have four primary decision makers in the company on acquisitions. Two of them are in the actuarial area. It's very important that we get a lot of information or good communication tools from this area to help communicate with the other people making those decisions. We also get involved in the negotiation and closing of an acquisition. Last, but not least, we spend a tremendous amount of time in the actual integration once an acquisition is made. The systems and support area is responsible for the building of all product-related reference files for any business that we convert to our main administrative system.

Everyone in the department is involved in one phase or another of the acquisition process.
I'd like to shift gears and talk a little bit about asset and liability management. I had mentioned before that we believe risk management is key to the success of our company and asset and liability management is a subset of risk management. Some of the primary measures we look at are duration and convexity, the option adjusted value of assets, liabilities, surplus, the option-adjusted value of distributable earnings, and the distribution of projected distributable earnings.

I think that we have several advantages based on our size. Being a relatively small company makes it very easy for us to communicate, and I think that is a tremendous advantage. There are some things that are done on a monthly basis between the asset and liability management actuary and the investment managers. Some of it is done quarterly, including providing reports to our

board of directors. Then, on an annual basis, we do a pretty thorough report that we share not only with the board, but also with rating analysts, and I think that has been a very effective communication tool.

Our investment managers would love to have a magic button that they could push and that would tell them how to restructure the portfolio for optimal performance. We haven't found that button yet. But what we do have is an interactive process that involves them very deeply in the process. The investment manager is often down in the actuarial area asking what would happen if he swapped assets within a line of business. I think that's working fairly well for us. It is taking quite a bit of time, but it's time that we think is very well worth spent.

Chart 3 has been particularly helpful. It shows the distribution of distributable earnings based on two different base sets of assets for a particular product line. That's something that I'm excited about. In the future, we'll be able to expand and that will really help the company.

How do we get this asset/liability management done? We actually have a department in which a very bright and talented guy works. I think we have been very effective in our investment department. This may be the closet to a corporate actuary that we have at Kansas City Life. We feel we're not doing everything that all companies are doing. We're not as deep into some of the things as others are, but as far as implementation, we're really making the most out of what we are doing, and we're very proud of that.

The next topic I'd like to talk about is value-added performance measures. We do an annual value-added financial analysis. This was driven by our president. We want to know (1) What our company's true economic value is on an annual basis; (2) How much value was created in the last year and how it was created; (3) What the primary value drivers are, and how they may be changing due to a change in product mix or a change in our customers' reactions or a change in the competitive environment. We also want to know (4) Where to allocate capital to maximize our return going forward; and, (5) Which products and customers are most profitable?

We've done this type of analysis for a number of years, but the past two years we've really formalized our efforts. We're preparing for next year, which will be our third year, and we really think that will be a key year. Our senior officers are covered under an incentive plan that is based on value-added earnings over a three-year period, so they have a lot of interest in this project. How do we get this done? There are a number of people that are involved in doing the work. It is very similar to Yvonne McCullough's concept in which some of the base product models are done in the product development area. Our valuation actuary spearheads the overall process and is responsible for documenting, coordinating, and encouraging people to get things done on time.

To give you an idea of time frames for this project, we typically start in the fall reviewing the models from the previous year and identifying what types of changes we'll want for the following year. We do it on a calendar-year basis. Along with the rush to get the year-end financial reporting done, we get started in January with the value-added analysis for the year with the goal of having it done by the April Board meeting. Of course, at that time, there's also first quarter financials that need to be done. We think that going into our third year, we have a system down that will really allow us to do that smoothly without working too many weekends or late nights, or without pulling our hair out.

In doing this type of analysis, we've tried educating our entire management team on what value-added analysis is and how they can use it. Our customer services manager is very excited to know that if he can come up with programs to improve persistency, we can actually show an increase in value. I do think that it is something that has been well received in the company. I won't say everyone really fully understands it yet, but I think we're moving there. I would say that it is a tough measure, and I think it's something that really has gotten management's attention and will help them make the tough decisions we need going forward to succeed in the environment we're operating in.

I'd like to talk about a project that's in its infancy. For many years, we have priced our products with expense allowances that were less than fully allocated expenses. It is our objective to fully cover all of our expenses, but due to sales not meeting expectations, that hasn't always been the

case. Earlier this year, we initiated a formal project where we will look at breaking down our pricing allowances by department. We are in our infancy on this project at this time, but I think there's tremendous promise for it.

Basically, we've identified specific departments where we believe an expense allowable approach will be a valuable tool. We've concluded that the measure doesn't make sense for all departments. We are using it for marketing, new business, customer services, claims, and a lot of departments that are directly involved in processing business. Our approach is then to work with not only pricing actuaries, but with department heads to determine what type of allowance they need to be able to issue a policy (in the case of the new business department) or to administer a policy (in the case of customer services). It also works well in dealing with our marketing department. The price of the product can be directly affected by the amount of allowance that they think they need to manage the home office marketing function.

We're about to integrate the pricing allowances into our actual budgeting process. It will be a tool for managers to look at as opposed to a mandate that they have to hit. Ultimately, managers will be encouraged to get to the appropriate level of efficiency and/or products will be priced to support the level of expenses required. We're also working on an expense management process for the departments that are not covered under the allowable concept. We're considering a zero-based budgeting approach. Last, but not least, what we're really trying to do is assure consistency with the strategic and operational plans as well as the financial realities of the marketplace. We understand the importance of growth. We understand the importance of being efficient, and this is a tool that, hopefully, will help bring those two factors together.

It's primarily product development people and myself involved at this time along with corporate or other department managers. I think one of the true benefits of this process may be somewhat of a watchdog process on the pricing process. I think it also will provide a real feasibility check on our future strategic plans as well.

I'd just like to provide some summary, conclusions, and insights now. I think that our team-based approach has been effective. I think we're very happy with the ability we have to deal with

these types of projects at this time. It's something I think we'll continually evaluate. Personally, I believe that the type of projects I've talked about are going to be increasingly important in the future. We are evaluating different types of risk than we have traditionally had time to look at in the past. I think we need to look at other risks caused by other factors in more detail. We must understand them and make good decisions for the company. I think that that's probably true in most companies. I believe that these risk management skills must get better in the future if our companies are really going to be able to compete in a broader financial services arena. I'm excited to see a lot of companies moving that way.

MS. SHIRLEY HWEI-CHUNG SHAO: I will first talk a little bit about the background of the corporate actuarial departments. The second is the functions we do, and the third is the special projects we're working on. The fourth is some kind of conclusion.

Our corporate actuarial function started in 1993. I remember that year vividly, because that's the year I came back from my assignment in Taiwan. I was in this corporate actuarial environment, and I interviewed Helen Galt, who's in the audience. She's my boss and the company actuary. I'm sure she had no idea why I wanted to work there, but I didn't lie to her, except to tell her that I needed a job, so I went for the interview without really knowing what I was supposed to do. A couple of months later, I was given an actuarial opinion to comment on. That was in November, and I had to do something about it for the year-end. I had never before heard the term *year-end*, so I definitely remember that year. At that point, we were a pretty small group; in fact, we're still kind of small, but we're definitely growing. Right now, under Helen Galt, we have three types of functions.

One is the actuarial oversight. That's the area I'm involved with, so I will talk mostly about that function. There's also the Actuary Leadership Development program under Helen. The last one is the demutualization project that is headed by Helen.

She reports to the financial management executive vice president (EVP), who then reports to the chief executive officer. The financial management EVP position is a brand new position created about a year ago. There is also a dotted line relationship with the profit center actuaries. We

have 33 profit centers. We work with the insurance profit centers, and not the typical investment profit centers like mutual funds. We have 80 FSAs and more than 100 ASAs and support staff. The number of FSAs in the actuarial oversight function is four.

Chart 4 is an organization chart. The company actuary is within financial management, which falls under the CEO. The company actuary has a dotted line relationship.

Some of the functions we perform include:

- Actuarial Staffing
- Actuarial Standards Setting
- Asset/Liability Management
- Capital Management
- Community Services
- GAAP Valuation
- Planning & Analysis
- Policyholder Dividends
- Pricing/Repricing
- Statutory Valuation

In 1993, when the area was formed, we were doing mostly the statutory valuation work, and we were involved with policy dividends. In 1996, our company converted to GAAP, and we were involved with the conversion process. Over the years, we started to get more involved with the pricing ALM. This year we started getting involved with planning analysis for the company planning process, as well as asset/liability management. We also performed staffing positions in other areas. I'll talk a little bit more about that, and community services, and how we set actuarial standards in various functions.

These are some of the roles in the statutory functions. The company actuary signs off on these valuations, so we have more dots in the organizational chart than in some of the other functions. We set standards and policies. We actually set the kind of documentation and the requirements we would like to see. We produce the cash flows; we have the models; we set the interest rate scenarios, and the profit center performs the actual test and reserve calculations. We review the results, and we approve some of the changes in assumptions and methodologies. We also recomply company financials at the enterprise level. Although, it's a pretty long process, I really

would be interested in Barry's comments after the meeting to find out how we can accomplish statutory valuation by December. I think we're struggling in February, so I really need to know how to get there in December.

The next one is pricing. Barry talks a lot about pricing. That is definitely a more tricky role for the corporate actuarial area to play. We're still in the learning process. Right now, we have an informal review process to try to understand the risk or features, and we also review some of the ROE analysis done by the business group. We definitely get a lot more involved with determining the statutory or GAAP reserves methodology for the new product. We also look at the proforma financial projections, or we ask for them. We don't always get them to try to understand the implications of some of the new products.

The focus, is definitely more on regulatory constraints and less on product economics. For example, I'm the chief actuary of the insurance subsidiaries. When I review the product that's going into this interest-sensitive company, I look more at what kind of capital constraints this type of product will create, any kind of risks that management should know, but I don't necessarily challenge why the product makes only 2% ROE. The review process is less formalized.

I'm involved on the ALM front for the subsidiaries, with sign off on the liability duration in the investment policy statement. We also review the liability duration every quarter, especially in the asset segments that have interest-sensitive products. We also help the business group do some ALM work. For example, one of the business groups was doing an interest-sensitive product in which it was interested in doing a stochastic process. It had a lot of limitations, so we helped them with consulting work, and we also helped them develop some of the theoretical material to help them price the product and understand the ALM implication.

As we talked about before, Helen, the company actuary, is delegated by the board to have the responsibility of dividends. We also coordinated a dividend-setting process for the entire company, and she's actively involved in setting the dividend scale in the individual lines of business. We have a similar role in the nonguaranteed elements. We have the role that's

delegated by the board to do that. In most business units, we then assign another actuary where we designate the role to them.

We also provide a great deal of support functions to other areas. For example, there's the planning analysis area, the capital management area, and the risk management area. We also provide support to the profit center, and that will be the profit center actuaries or profit center controllers. We also provide support functions to the corporate and profit center controllers.

In addition to those regular functions, we do a lot of other community services. For example, we sponsor internal seminars for the actuaries in the company. In 1998, we did a full-day seminar with about 80 actuaries participating. We also communicate and participate in regulatory developments. We provide the actuaries with the professional updates. We're in the process of building a web site now, so the actuaries in the company can communicate to each other, and we have a place to store a lot of the information to be used in the community. We also establish actuarial standards in many things we do. The last two functions are on the human resource side. We supervise the Actuary Executive Development Program. We also recruit (with the help of the Human Resources) experienced FSAs for the business groups.

In addition to our regular functions, every year we have some special projects that usually take us almost a half a year or full year to complete. These are very long projects. The projects that are big enough to get on the screen are four projects in which we're involved. One is the integrity and the interaction between the administrating assistants to valuation assistants who make sure that there are controls in place. This is not an area we were involved in before. In other words, we set standards, and we review results. We view ourselves more at a high level. We don't want to get in and roll up our sleeves and do any real work like Barry was talking about. This project is really getting to the data integrity, and is the first type of project in which we got involved.

The next project we're working on this year is trying to identify the pricing criterion used in a company. With so many profit centers, we don't have the same standards, so our goal here is similar to what Barry was saying, which is to try to understand the pricing criteria so that management can understand the information at the same level. We have a situation where one

business group will be pricing a product and claiming that the ROE is 30%, whereas, the next profit center pricing is exactly the same guarantees as in risk, but we couldn't even make 5% ROE. That type of inconsistency is really not good management information. Our goal is first to understand the pricing criterion in the company, and then make recommendations as to how to get them more consistent as far as communicating to the senior management. I think our current thinking is definitely going to be more GAAP related.

The next one is our actuarial modeling. This is a very big project as well, because the actual modeling goes across a lot of different functions. The areas we concentrated in (at least after the first round of the survey) was to zero in on several modeling units. There's a substantial need in my company to do a better job in planning, for the next several years, so there's a big need to do a good planning model as well to be able to explain the GAAP results between the actuals and the plans. This has been identified by the business group as the most important need.

The second need that has been identified by the business groups of actuaries is the deferred acquisition cost (DAC) projection models. Sometimes we feel GAAP is a monster. It's like the measurements keep on feeling the volatility of DAC, and there's a lack of understanding of the drivers. So there is some interest in improving the DAC modeling capability. The third area that our company has identified is the asset adequacy analysis process. We view that as a huge process with little management use. There is some need expressed by the business groups to cut down the process or, if we can't do that, then maybe we need to find other uses for that modeling process, because it's a huge process that consumes a lot of people's energy. This is also something we're trying to look into.

The fourth area that we have identified is the pricing model. In particular, we want the pricing modeling to do more financial proformas on a GAAP basis, to do office modeling, and to understand the GAAP implications of our products.

The last project is the GAAP earnings volatility. There's a lot of interest due to us going public. There is a lot of interest to try to reduce the volatility of GAAP earnings from quarter to quarter, and from the actual reporting numbers to the planned. Somehow the actuarial items in the

earnings are being viewed as a source of volatility. We're being asked to come up with project plans to reduce the volatility, because we're picking up different assumptions or different methods that create those kinds of methods or unwanted volatility.

One of the challenges of being in a corporate area is that this is always just a balance between how much you want to centralize and how much you want to decentralize. I personally don't think that there is one solution, or that there's one perfect answer. We're constantly battling this decision and the decision varies by functions as well. That kind of challenge certainly is not really helping when we have frequent reorganizations in my company. Just as I said earlier on, we had a change in leadership last year as well. There are other types of subtle challenges in our relationship with the profit center actuaries. We like to think that we are consultants, and we're there to help, but I think they all understand we're also there to oversee. So we're wearing multiple hats, and sometimes it gets pretty tricky.

The next one is somewhat related to the dotted line relationship. I've been told that I don't add value to the process. As Barry said, it's as overhead as you can get. So how can we create a perception that we are value added and that the profit centers can benefit from us being around? It's an important task for us.

The other challenge of not having the direct line relationship is that we don't have direct correlation so we have to sometimes resort to more persuasion in certain cases. The next one, and I'm sure everybody's having the same issue, is that the corporate and the profit centers might not have the same priorities, objectives, and time frames, so how the resources are applied definitely differs.

We also have the challenge of staffing in the corporate actuary. We're never quite sure about what type of actuaries we should staff. I think our staffing is probably towards the high end of the actuary. In other words, we hire people with a lot of experience because we do a lot of standard setting and review work. We don't do a lot of production work, except for asset cash-flow modeling, so we definitely have staff actuaries at a pretty high level.

We have talked about the challenges from my perspective, and if we ask Jim O'Connor from our profit center, he may tell you otherwise, so maybe we'll get his comments later. I feel that we have definitely created more consistencies and standards. These are all the functions I wish to talk about. For example, Yvonne talked about the asset adequacy analysis or the lack of consistencies in defaults and interest rate scenarios. We have provided those kinds of guidelines, although the work is not being done in our area. We definitely have consistent assumptions, and we are going across the business groups.

We also design. We're very involved with process design in a lot of the functions. We actually design the process and how it might work out. I think at the end of all that design and review, we actually have a better work product. We have many different binders of things we can go back and look at.

We also have facilitated a lot of communication between the corporate and profit centers. This is not just in the actuarial function. We also view ourselves as a main bridge from the actuarial function to the other functions in the company. We constantly talk to the controllers, the treasurers, and the portfolio managers about various issues, and we act as a bridge for the communication. We also have an opportunity to share some of the expertise and resources by being able to go into a certain business group and help them to fight the fire occasionally.

I think if I look at the years that I've been involved with these processes, we definitely are more successful if our function is given by either the regulators or by the board. When there's no clear given authority, we need to work a little bit harder in the process.

I think that makes a corporate actuarial function effective, and will clarify the roles and responsibilities within the corporate and the profit centers. This is not easy to do. There are many gray areas and certainly these roles or responsibilities have to differ by the functions we're talking about. We also need to pay a lot of attention to process design and how to make it work. In other words, you have to follow-up and actually execute a lot of the designs. The third one is the buy-in process. This is not just the buy-in between the corporate actuarial and the profit center actuary; it is also the senior management's buy-in and the profit center's and the other

people in the profit center's buy-in. That's a very important process. Communication is always the key to any successful relationship. Finally, I think the corporate actuary should really create opportunities for the profit center actuaries. This can be an opportunity in the sense of having the rotation program to bring the profit center actuaries through the process or to try to get more presentation among and from the senior management for the profit center actuary. In other words, I view us as a salesperson in the process for the actuarial community in the company.

MR. WAYNE E. STUENKEL: I'm with Protective Life, and I work in a corporate actuarial role there, also. We've heard a good bit about communication between the corporate area and the divisions or the lines of business kind of formal or dotted line communication. I'm wondering if you all have tried to do any communication across lines between the divisional actuaries. We've been doing something kind of informally now for the last year or so, and we're trying to bring the divisional chief actuaries together once a month for lunch to talk about stuff and issues across divisions. I'm just curious as to whether a corporate actuary might have a role in facilitating across divisional sharing opportunities.

MR. SHEMIN: We have a couple of examples of that. We have a Pricing Committee, which I chair, and it includes the pricing actuaries from each of the product lines. It meets monthly. Its original purpose was to help get a collaborative approach towards developing pricing standards to achieve consistency, so the people would be effectively involved in the process. It has evolved towards more information sharing. That's the group for which we we're trying to develop GAAP pricing information. The group, itself, develops an agenda of what items it wants to discuss, so that has been fairly successful from a communications perspective.

We have a committee that coordinates FSA salaries and promotions, and we have a group called the Finance Council, which the CFO chairs. It's not primarily actuaries, but the chief financial people in the insurance business units are uniformly actuaries, so the majority of the people in the audience, at each of their monthly meetings, which deal with financial topics, will be actuaries. There are usually some actuarial topics on the agendas.

MR. MILTON: We've also found that if the corporate actuary offers to buy lunch, we get a pretty good buy-in.

MR. SHEMIN: Corporate actuaries don't like to buy lunch though.

Shirley asked how we get cash-flow testing done by December. We don't get it completely done by December. We use September 30th yield curves and September 30th assets to actually do the testing. That enables us to get reasonably good results for what I call first try or second try results for each product line in December. The main purpose for that is we're not trying to figure out how much the reserves should be; we're trying to figure out whether we need to set-up anything extra. We usually have fairly substantial margins, so if something like that doesn't hit you in the face, you're probably not going to have to do it. We usually get enough done so that even if the results might not be in final form by December, we've had at least one and often two run-throughs in a debugging mode of each of the products. We know whether we've got any real issues and a line like GICs that has some fair degree of leverage there that could pop something unexpected up if you weren't watching.

In New York, our aggregation abilities are more restricted, so we have to look more closely at certain lines of business to see whether we might need to set-up certain extra reserves in New York. So we focus on getting those lines nearly done by December so that we can tell whether we need to set anything up. When we have had to set something up, we've actually used December 31 results, at least on the yield curve, but not on the assets to figure out how much to put up. So I don't want to overstate how much we do, but we do enough by December so we know whether we need to set-up any extra reserves.

MS. HWEI-CHUNG SHAO: We use September data as well, so I know it's not the date.

MR. SHEMIN: The first time we did this, we had the planning meetings in the spring, and we also had a meeting of all the financial actuaries involved in adequacy testing as well as the individual business unit meetings. At those meetings, we went over the fact that this year we needed to get something done in December. It's tough to argue against that. I worked with each

of the business units to work through what they needed to do, and what barriers needed to be removed, and what help we could be to get it done by December. Without that, it wouldn't have happened. They had to buy into the fact that it was an appropriate thing to do, and we put out certain things that we had to put out faster. There are certain assumptions that we needed to resolve that are consistent across lines that come out of corporate actuarial. We needed to make sure we got those done on time. We needed to harass the investment people to get certain investment data available earlier than they would otherwise have done. That's what enabled it to happen.

MS. HWEI-CHUNG SHAO: We also had the spring post-mortem meeting like you, but I know it's not that either.

CHART 1
Organization

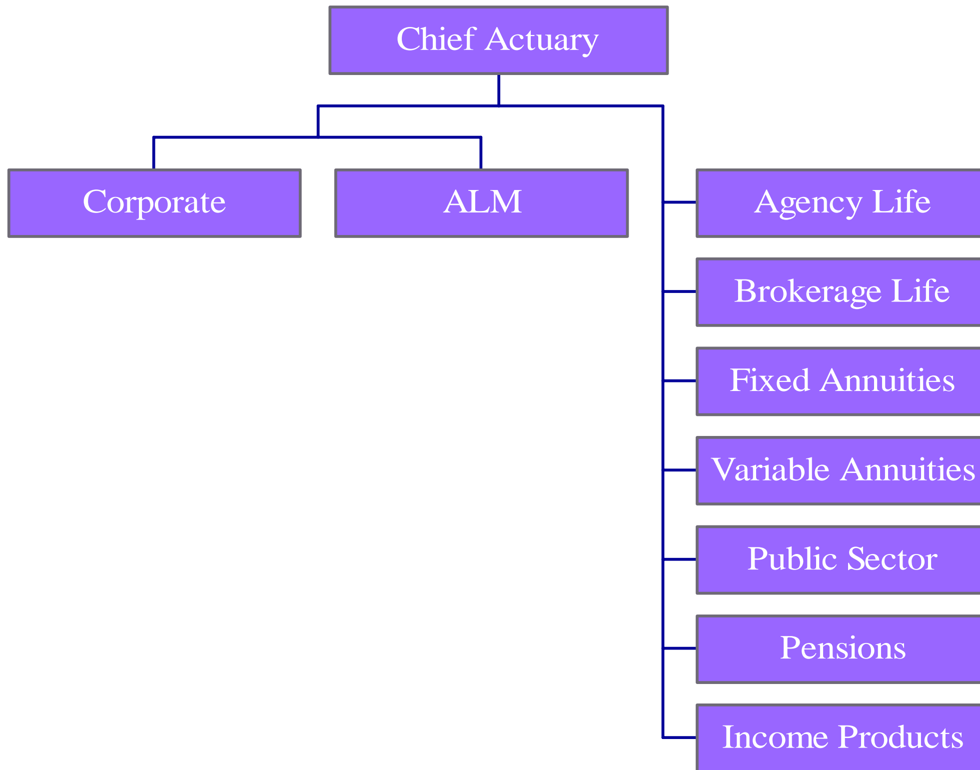

CHART 2
Actuarial Department Structure Acquisitions

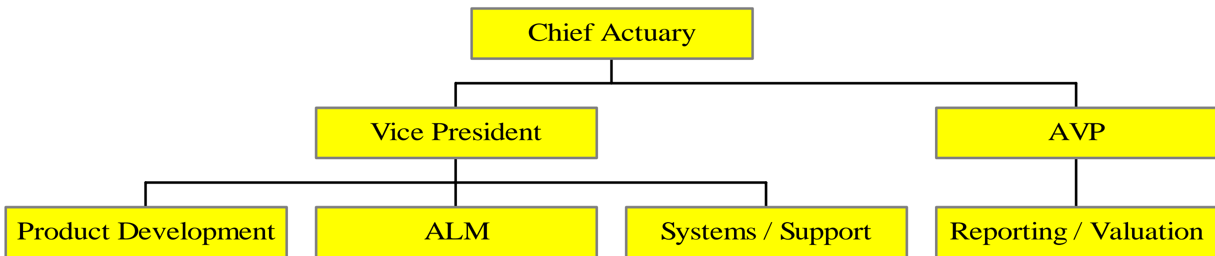

CHART 3

Distribution of Earnings
Alternative Asset Structure for Fixed Annuities

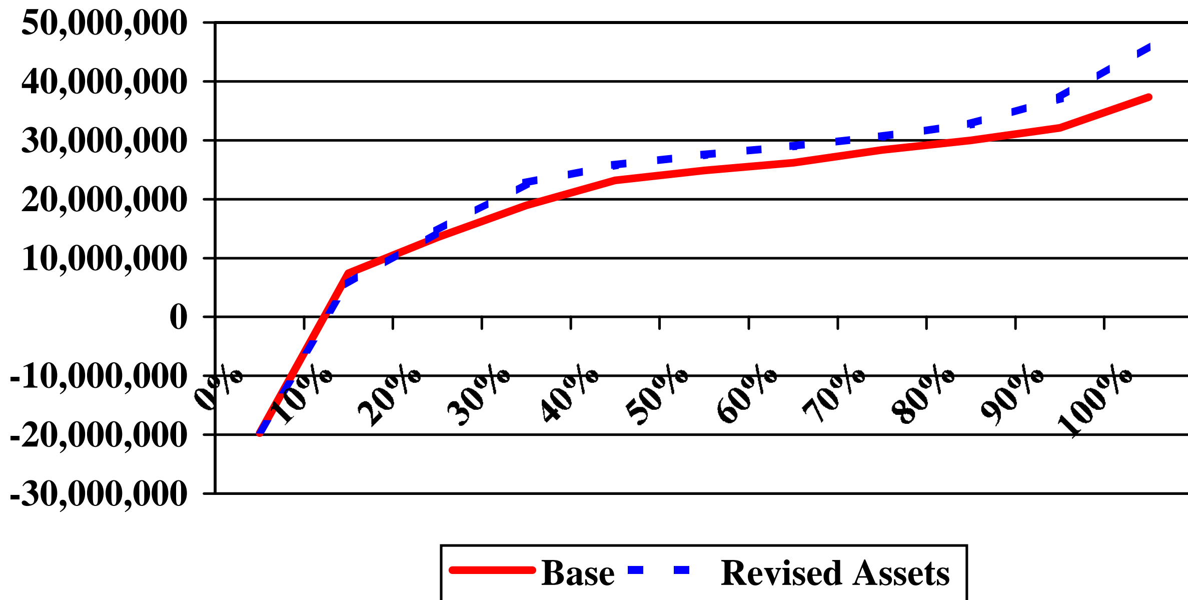

CHART 4
Organizational Structure