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## THE NON-MANAGEMENT OF PENSION ASSETS IN RELATION TO LIABILITIES

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Investment policies and strategies for pension funds are often developed independently of liability consideration. Does the probable mismatch of asset and liability cash flows pose a problem?

- Extent of problem
- Actuarial concern with certification of assets
- Structuring the fund to recognize the relationship between assets and liabilities

MR. CHARLES E. DEAN: Welcome to the panel discussion on the Non-Management of Pension Plan Assets and Liabilities.

The first member of our panel is Mr. Guy Cooper. Mr. Cooper is not a member of the Society of Actuaries but he is an expert in the area of pension fund investing. Mr. Cooper spent ten years in the institutional investment department as an office manager with Merrill Lynch. About a year ago, he joined the consulting firm of A.S. Hansen, where he specializes in investment performance measurement of retirement plans and helping plan sponsors select asset managers.

Our next panelist is Mr. Ray Pinczkowski. Ray is a Fellow of the Society of Actuaries and is a principal of Milliman & Robertson in Denver. Ray works in employee benefits and retirement plans. He has a total of 17 years of service with M&R and is one of their homegrown principals.

Our final panelist is Mr. Martin Stempel. Marty is a consulting actuary with Dan McGinn Associates, immigrating to the West Coast about 11 years ago from the Prudential. Marty has been very active rather early in the pension plan forecasting. He is a consulting actuary working with both multi-employer plans and corporate pension plans.

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The title of this session is the Non-Management of Pension Plan Assets and Liabilities. There are some implications in that title. One implication is that there is a relationship between the assets and liabilities of a pension plan. Another implication is that this is not being handled in the best possible way. We have to agree with those implications and that is why we are on this panel.

Too often, the asset manager talks to the plan sponsor and the actuary talks to the plan sponsor but the asset manager and actuary have very little communication between each other. And when they do, they find that they are using a different vocabulary, or what's worse, some of the terms are the same but have different meanings.

I think it's important to note that a pension plan is not simply a pool of assets to be managed. Those assets exist because of and in order to meet obligations that are accruing to the plan participants for their service with the plan sponsor. There is a very intimate relationship between the assets, the liabilities and cash flows into and out of the pension fund. What is needed is improved communications between the asset managers, actuaries and plan sponsors and better tools to help the plan sponsor meet its goals.

The plan sponsor wants to have reasonable stable plan costs. The sponsor wants to have a reasonable match of the cash flows into the plan from employer contributions and from investment earnings and the cash flows out of the plan for benefit payments and for expenses. Of course, most plan sponsors certainly want to reduce their cost, at least within an acceptable degree of investment risk.

Who are these people called asset managers and how do they work? We have Mr. Guy Cooper, who is very familiar with asset management in this country for retirement plans with us today and he is going to provide some comments about how this is done, how it should be done, and how it can be improved.

Mr. GUY COOPER: I have a fairly simple message I'd like to communicate to you today. It's not totally original, in fact, it goes back to an article that was published in the Financial Analyst Journal in 1975.

The message is that investment management is a loser's game. When I say a loser's game, I don't mean that everybody that plays loses or that the people who are doing it are in some sense losers. What I mean is it's not a winner's game, and I want to spend some time first defining the distinctions between a winner's game and a loser's game. In order to win a loser's game you have to play so as not to lose. You don't play to win. Essentially you adopt a conservative, steady approach and try to minimize your mistakes.

One of the best examples of a loser's game is my own golf game. Everytime I go to the first tee, I promise myself several things. First of all, I'm only going to use a three wood throughout the round because I know I can hit that fairly straight. I'm not going to be too excited about hitting the ball long, I'm going to be careful about water and sand and I'm not going to try to get all my approach shots right up to the pin. I'm going to settle for two putts when I get on the green.

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Usually that works for about the first two holes and then the third or fourth hole, I decide, well I'm not such a bad golfer after all because I probably hit at least one good shot in the first two holes. Then I start thinking all I have to do is hit the rest of the shots like I did that one good one.

So all of a sudden I bring out my driver and I'm swinging hard -- I'm trying to knock it three hundred yards. I'm going right for the pin on my approach shots. I remember the old adage, "Never up, never in," so, I'm putting real hard trying to make one putt and sure enough what happens? I end up with sevens, eights and nines and I end the round about 110.

Well, even at my best, I'm only going to shoot about maybe 95, but I would do a lot better if I realized that for me golf is a loser's game. I should minimize my mistakes.

For the pros, golf is obviously not a loser's game -- it's a winner's game. The professionals have to play to win, but there are very few people who have that kind of talent.

Tennis, at least amateur tennis, is another loser's game. People that play well at amateur tennis minimize their mistakes. They don't hit the ball in the net. They don't hit it out of bounds. They don't try to go for aces and just try to keep the ball in play and let the other person hit the ball in the net. In fact, a Doctor Simon Ramo did a study of tennis. This is actually where the concept of loser's game versus winner's game comes from. In a study of amateur tennis, he found that if you counted shots won and shots lost in amateur tennis, eighty percent of the points are actually shots that are lost, actual mistakes.

So it stands to reason that if you take yourself out on the court and play a conservative game, you do a lot better. All of us who play tennis or golf or many other games know this, but for some reason we can't bring ourselves to do it because we always have this hope that we can ace three out of four serves. So, we proceed to play these loser's games as if they are winner's games and we don't do very well.

The ultimate loser's game by the way is war. The person that wins the war is the person that loses the fewest soldiers and makes the fewest strategic mistakes. In fact, it's fun to think about what are loser's games and what are winner's games. Clearly, gold rushes are winner's games.

What is the evidence that investment management is in fact a loser's game. First, don't ask investment managers why it's a loser's game because approximately 80 percent of them will tell you that genius, brilliance, insight and aggressiveness wins out. But if you look at how they have done over almost any period of time, you find some very disappointing things. Number one, approximately 70 percent of investment managers cannot even do as well as the unmanaged indexes over almost any time period you want to look at. These statistics, generally speaking, come from a ten-year time period. If you look at

the ten years from 1974 through 1983, seven out of ten times you'd have been better off if you had simply bought the S&P 500. In 1983 alone the market itself, the unmanaged index, was up about 22% and the average investment manager was fully four percentage points less than that.

So there's that evidence. There's another body of evidence that investment managers are very unreliable in anticipating markets. You would think if investment manager can do anything, they have a better idea than you and I of whether the market is going to go up or down, or whether interest rates are going to go up or down. If they did have some good ideas about that you would think they'd be able to position their investments to take advantage of it. But the fact of the matter is we see time after time after time that investment managers just cannot do that. Hope springs eternal and plan sponsors still think that they can do that, but the evidence is very compelling.

There is also compelling evidence that past performance is a very unreliable guide to future performance. If you take a look at 300 investment managers over the last five years and take out the top 20 percent of them, only about 20 percent of those will be in the top 20 percent in the next five years which is about what you would expect on the basis of chance.

Although all of us look at past performance it's not really a very good guide as to future investment performance. There are some theoretical arguments as to why all of these things should be taking place. Trading costs alone are gigantic for most investment managers, and you can do a little calculation to show that before fees and expenses, and trading costs, a manager would actually have to beat the index by 40 percent just to beat it net by 20 percent. Or you have to beat it 20 percent before fees and expenses just to stay even with it after expenses.

Another theoretical argument is what I'm going to call the strike-out home run theme. If you take a look at baseball statistics, you'll find by and large that the home run kings of the game are also the strike-out leaders because they swing for the fences. Sometimes they connect and when they do -- boom -- there it goes. Kind of like me and my driver, sometimes I connect and sometimes I get a good drive. By swinging for the fences all the time, you have a higher likelihood of missing the ball altogether -- like me with my driver. That may be okay for baseball but it's really bad for investment because not only do the home runs not equal the strikeouts, but the impact of the strike-out, the negative impact, is much more damaging than the positive impact of the home run.

Some implications of this are number one, "Beware of Geniuses". Wall Street is filled with stories of yesterday's hero who is today back at the shop trying to figure what went wrong with the system.

A second implication is "Honor Gray Hair". It takes a lot of experience to earn a little humility in probably anything and certainly in investment. In order to accept that your profession is after all a loser's game, you have to have a little humility. So you really want

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somebody that looks like they've been around. It is almost past the time where we will actually see practicing investment professionals who went through the depression but there are still a few around. Those people that went through the depression talk much differently about investing money than those people who have not.

If you really believed that investment management was a loser's game, what would you do with your pension assets? First of all, you would do something much different than most people are apparently doing. I will speak to the most common situations today. There are plans where sizable funds are given to one or a series of investment managers who are just told, "go make some money!" This is the antithesis of our topic today, but it is in fact the way most plans are managed.

If, as a plan sponsor, you really believe that investments is a loser's game, then you need to do the following: you first decide upon asset mix. There is a whole topic in itself as to how to do that. Perhaps you used some rules of thumb related to the underlying implicit real rate of return assumption of your funds. Perhaps you used some sophisticated asset liability modeling. In any event you come up with a number. Let's say it's 50 percent. You decided that everything considered, your fund is going to be 50 percent in equities. That alone is something that many plans do not do. The investment manager in many cases makes that decision. When it's possible, he surely should do so.

After you make that decision, you then go out and hire somebody to run that 50 percent equity portion. You would have a preference for very conservative time-tested investment strategies that don't really have any sex appeal. Generally speaking, these strategies relate to buying stocks that have value or even stocks that pay high dividends. A focus on stocks that pay dividends is something that people did back in the 20's and 30's. It's not something that people do today, and consequently, it is a much ignored area and for that reason it is an area with a great deal of opportunity. In any event, whether you went full tilt in buying stocks that pay dividends or some variation thereof, you would hire a manager whose investment philosophy was conservative.

You would then hire another manager who would manage the remaining 50 percent in also a very conservative fashion. Today conservative bond strategies means intermediate bonds. You probably would never own a long term bond if you really believed that investment management was a loser's game. You would own immediate term bonds and you wouldn't own short term bonds.

Next, you would avoid, as the plague, something called market timing. Market timing is something that is very popular but really pretty useless. Market timing is the practice whereby investment managers decide that next year is a good year for stocks, and so they sell some bonds and buy more stocks. Or they decide that next year is a good year for bonds (or next quarter, next month). So they're always moving that asset allocation around, for instance 50% stock to start with and the next time you look it's 30% stock.

Market timing hasn't worked. The evidence of that is overwhelming, even though if you went out and took a poll, you'd still find about 60% - 70% of investment managers would tell you they can do it. But in our opinion and in fact in the opinion of most investment consultants, it's really kind of a shell game. The fact is it causes a lot of mistakes and most people who have tried end up giving it up. So, "Eschew Market Timing".

The last thing that you would do would be to allocate your contributions in such a way as to bring your asset mix back to your target. So you start out at 50 percent and you go through a year, and because the stocks go up more than bonds, now stocks are 60 percent of your portfolio. Take your contribution for the year and put it into bonds to bring back your asset mix with 50% stock.

Now, there is almost no pension plan that does that. Most of them either allocate on the basis of performance or allocate our contribution on a 50/50 basis. It should be clear to you but if you do that, very quickly your assets mix is going to run away from your 50% target.

That is what you'd do if you believe that investment management is a loser's game. As I said, the evidence is overwhelming that it is a loser's game. If you were to make any departure from that kind of structure, you would be evidencing your belief that investment management is a winner's game.

I suspect I have not changed anybody's mind and I know I am not going to change any other investment manager's mind, but if you really look at the facts, investment management is a loser's game.

MR. DEAN: Thank you, Guy. I think most of us found that very interesting. Plan sponsors looking for the asset manager with humility will probably find that rare as an actuary with humility.

Our next panelist is Marty Stempel. Marty has a number of thoughts on the asset/liability question, bond dedication and a number of other issues that he will share with us.

MR. MARTIN E. STEMPEL: I would like to talk about some of our concerns about investment management, why we think the relationship of assets and liabilities are more critical today, how we developed the projection system we use at my firm and some of the projects we've done with it.

When I first looked at the topic I was a little surprised because all the plans we customarily deal with have one or more investment managers. If there's a trust, there's a professional trustee to receive the contributions, hold the investments, keep track of the proper and timely receipt of dividends and the results of purchases and sales. Many plans are served by very competent managers, some of whom consistently beat the averages. Sometimes they're the gray heads and sometimes not.

Basically, the focus is short term on investment and reinvestment without much attention to the concurrent growth of benefit liabilities, expected cash flow patterns, or the potential effect of the contingencies outside everyone's control. And often it seems the actuary is a participant in a conspiracy of silence as the investment manager presents his report. Very often, of course, the actuary is not even there. But how often when we are there do we let slip by, without any comment, a manager's simplistic statement that his investment performance exceeded the actuary's assumed rate so everything must be *hunky-dory*.

Properly performed, the standard valuation will establish a balance between the present value of benefits and assets and expected future contributions, usually as a level percentage of salary over the remaining work life of covered population. This balance, of course, depends on the achievement of a great number of assumptions, of which the interest expectation is only one, although it is one of the most powerful and certainly one of the most obvious factors.

Little attention is usually paid to the concept that an assumption that the pension population remains stable usually underlies the ability to express future contributions as a level percentage of salary. But if this and all the other assumptions are met, the benefits should be provided for by the expected level of contributions.

The plan actuary probably won't be around at the end of that time or at the end of the mortality table to worry about that. But before that judgment day, of course, many other events can happen. The plan population may shrink due to technological change, loss of the company's market, competition or the need to shut down a plant. Salaries may advance much more rapidly than anyone expected. Social Security benefits may rise more or less than expected or less than expected, or they may not rise as much to offset the intended proportion of the benefits leaving more to be paid for by the employer. Under these contingencies, plan liabilities are likely to be at a much higher level in relation to assets than anticipated and benefit security ratios may decline. Even if assumptions are being met the standard cost methods do not necessarily work toward funding the value of accrued benefits according to an orderly preconceived schedule. In fact, the actuary often takes a conservative view of long term investment earnings to provide a margin for these unforeseen contingencies.

Therefore, I think that the actuaries shouldn't allow the investment manager's confusion of his short term results with our long term view to stand without any comment about the long term nature of our view of things and any margins that we may have built into that simple sounding investment/interest assumption that affect the comparison of even the short term results.

The standard valuation of a pension plan provides a relatively static statement of present values at a single point in time. The key to managing the asset liability relationship is to provide information about the future pattern and level of the actuarial value of vested benefits.

This means projecting the assets and projecting the benefit liabilities over time and comparing them. The projection process involves modeling the plan population, and calculating the flow of contributions, benefits and investment income to develop a moving picture of the potential financial condition of a plan rather than the standard actuarial snapshot. A first set of projections based on the existing actuarial assumptions would develop a picture of the expected progress of the fund and vested benefits and allow a computation of benefit security ratios into the future. If this apparent schedule is too rapid or too slow, adjustments in the funding pattern could be developed.

It would be a good idea to develop supplementary projections based on alternative scenarios of future experience to test the sensitivity of the contribution and funding levels to these alternate experiences. Management would be able to see the effects of possible growth or decline in the number of participants, salaries rising faster than anticipated and differences in the expected investment return. Armed with this information, the sponsor can develop a schedule for funding the vested benefits over time, and the investment strategy can be developed to recognize the plan's cash flow needs as well as the desired relationship of assets and liabilities.

This information and the desire of the sponsor for the consistent pattern of the relationship of assets and liabilities will increase the demand on the investment manager to perform. If the desire is there, I believe that investment management will respond to it.

Additional projection projects can help in determining alternative investment categories or aid in the analysis of alternative investments like GIC's, dedicated bond funds or even the purchase of annuities.

The program of managing the assets can be developed so that the sponsor feels more secure in meeting his obligations to both the participants and the stockholders, and knows what the risks are if plan must be wound down or terminated.

I think the consideration of asset management in relationship to benefit liabilities is even more critical today. The concept of adequacy of funding in relation to accrued benefits has been discussed for many years before many projections were being done. I believe that ERISA codified the responsibility of the enrolled actuary to act on behalf of the participants. He should not be a silent bystander to the risk that accrued benefits could be lost upon plan termination. I believe it's the responsibility of the actuary to discuss the risks of unfunded benefit as he would discuss the financial status of the plan with the sponsor, and should propose the use of projections to develop information that can be of use to him. ERISA also introduced the concept of plan termination insurance, and as you know proposals are before Congress to tighten responsibilities of the corporation plan sponsor upon plan termination. The annual premium is to be raised to cover the PBGC's take-over of plans that have already terminated.

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In multi-employer plans, in which we do a fair amount of work, the actuary has to compute the unfunded vested benefit liability as the basis for figuring the withdrawal liability for employers that cease to participate in the plan. This makes the actuary on those plans keenly aware of unfunded liabilities and the pressure to reduce them.

Of course, the multi-employer plan trustees are concerned not only with responsibility for collecting these withdrawal liabilities but also with the resulting shrinkage of the contribution base as employers become more and more reluctant to join such plans because of this withdrawal liability.

We also, of course, have the FASB proposals to put some measure of unfunded liabilities on the balance sheet.

The factors of the stiffer PBGC requirements and the potential FASB requirements have also increased the interest in getting away from defined benefit plans in favor of defined contribution plans, which are less of an ongoing burden.

I believe that the combination of all of these issues will result in more and more concern over the relationship of assets and the unfunded vested benefit liabilities.

Now I would like to talk briefly about the history of the development of our projection system and some of the things that we've been able to do with it. In the late 1970's, we faced the client demands to know where their final salary pension plans were going. Our initial response was simplistic projections, entirely separate from the valuation, where we were able to project assets with simple investment assumptions. We did some work in projecting future contributions and approximated the future course of liabilities. Later, as interest rates rose, we wanted to be able to reflect the rising rates of interest in a way that blended those higher current rates with what remained our viewpoint as to the long term view of inflation.

We felt that to be more realistic, we needed the ability to deal with variable rates of interest. What we did was to integrate the population projection methods that we had developed into the valuation process. From the population projections of active and retired lives, we developed year-by-year benefit streams. By keeping the benefit stream separate from the discounting process, we were able to discount these benefit streams at varying rates of interest in an easy and simplified way.

We were able also then to take alternative scenarios of investment experience. This way also we were able to do these projections with different expectations of salaries and covered workforce.

I should point out, this was still a closed group valuation method and separate benefit streams were developed for the valuation of vested and accrued benefit liabilities. Then, in the projection process for projecting the future costs of the vested benefit liability we also added in the effect of additional entrants to the population and additional accruals of vested benefits.

So, it's basically the benefit stream that we developed which enables us easily to compute the future vested and unfunded vested benefit liabilities with varying interest rates.

What have we been able to do with some of these projection methods? Largely, of course, it depends on the client's concern. If this concern is simply with the status of the current retired life liabilities, then we have done relatively simple benefit payment projections for the existing group of retirees. These can be used for structuring a dedicated bond fund or insurance company contract with guaranteed pay out. The projection also evaluates the cost saving of the bond dedication process.

For other clients who are concerned with unfunded liabilities, and in particular multi-employer plan clients, we have done complete cash flow projections of assets reflecting all the inputs and benefit and expense outputs to compare with the year-by-year projections of vested benefit liabilities. Often we compare the effects of alternative scenarios of population growth or decline, inflation, rates of retirement and salaries. In multi-employer plans we can also deal with the expected growth in the rate of contribution to the plan by the employers.

For certain clients who are interested in the purchasing of annuities and having an additional third party pay the benefits to the retired people we can also help them by determining the amounts that they would need in future years to continue this purchase, and to see what the effects of those purchases would be on the cash flow of the plan or the investment strategy of the plan.

I think that in the future, more and more attention will be paid to the relationship of the assets and the liabilities. I think we will see a growing sophistication on everyone's part and hopefully better communication between those parties. I would also think that more work will be done in improving the asset modeling side of these comparisons, possibly to take account of the variances in rates of return among classes of investments to help the clients do a better job of allocating money to investments. We often segment the fund and develop separate rates of return for various parts of the fund, but as I said, we don't yet take into account the different variances in rate of return the different classes of investments can enjoy or suffer.

One other point I would like to make is that if we are projecting investment rates of return (or for that matter certain other experiences) long into the future, and if those experiences really come about, then we would have a responsibility to change the assumptions. Very often we see projections of liabilities on the initial set of actuarial assumptions with very high assumed experience investment results over a long period. Even the most sluggish actuary would have to change his assumptions to reflect that scenario in some way or another.

In 1978, I wrote a little article for Pensions and Investments entitled "Actuary and Manager, Improving Relations with the Odd Couple". In that article, I suggested it would be a good idea to get the actuary

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and investment managers together and talking. As I said, some managers are simply still simplistically comparing the short term results with actuarial assumptions and often the actuary is silent in response. The kind of asset and liability projections that we've been talking about and that are becoming more and more common will provide a common basis for the plan sponsors, the investment manager and the actuary to start getting together and communicating on the same wave length.

MR. DEAN: I think you can see that we really have one of the most interesting topics in the retirement plan area here today and an area in which we are just starting to explore the possibilities.

Our next panelist is Ray Pinczkowski. Ray is going to discuss a particularly interesting asset valuation approach. You might ask yourself how much time you devote to projections of future benefit payments and calculations of liabilities and how much time you devote to putting a proper value on the assets of the plan. And with that in mind, here's Ray.

MR. RAYMOND PINCZKOWSKI: In looking at the audience, I think a layman would report that there are more people in the non-smoking side of the audience than on the smoking side. However, a typical actuary would foster questions in his mind; given the topic that we have today, does that mean that more non-smokers are non-managers of pension assets and liabilities or that they are more worried about it. With that kind of a mind I took the topic and proceeded to ask some of my peers what they are doing about management or non-management of assets and liabilities. It's always a somewhat intimidating task to find out how far out of step you might be with some of your peers. I'm the first to admit that in the sector of the market that is broadly defined as the private sector plans of medium and small size plans, the overwhelming majority of the people that I talk to are in the habit of using market value of assets on the equity portion of the pension fund. There is an inclination to use either averaging technique of some kind or perhaps some kind of a write-up or write-down method to recognize the unrealized appreciation or depreciation. Very infrequently, somebody will actually use the amortized valuation method for bonds.

I'm the first to admit that I'm in the mainstream of that practice, but in talking to peers, I find that there is at least one other method that is getting a lot more attention and interest, really more so outside the USA. I have just become exposed to it in the last week or so. I think it has some compelling arguments. First, why do we use market valuation techniques that we do? I think the most obvious answer is that they're simple and that the market value of assets is a high credibility number with our clients and with the auditors. It's one of the few numbers in an actuarial report that everybody can agree as to what it is and possibly what it means, even though it may be volatile. Then there are the ERISA rules: both the law and the regulations in effect say that you can use any asset method you want as long as it is within 80% - 120% of the market

value and reflects market value in some manner or another.

What is wrong with this market value approach? I submit that in simplest terms, what's wrong with it is that if you look at a benefit payment in the year 2000, say of \$100, to a retiree or a prospective retiree and you look at a \$100 corresponding income amount to be received in the same year 2000, that those two \$100 financial transactions ought to offset each other.

If we are using the market value of that \$100 coupon and if we are applying traditional actuarial techniques of discounting \$100 benefit payment at 5, 6, and 7, 8% interest, we don't have the same present value on the actuarial balance sheet at all. Depending upon the difference between your valuation rate on the liability side and the market interest rates on the market value of asset side, you could have a large difference. Question: Why?

That simple example highlights the difference in treatment that we have for assets and liabilities that are really on the same balance sheet. The objective of this balance sheet is to come up with an employer contribution rate that is relatively stable on a long term basis. I don't think we're particularly concerned about the market value of assets for instance. It's a part of the process but it's not the end result that we are most concerned about.

I think we really are being inconsistent in the process of calculating a long term employer contribution rate. What's being done? What did I find out from my other peers? A number of things. The first is to determine a matrix of employer contribution rates. If you can imagine for a minute or two a matrix with interest rate assumptions on one axis and salary scale assumptions on another axis. A common technique is to run the valuation several times at different interest and salary scale assumptions and see how sensitive the answer is to differences in those key actuarial assumptions. We can set aside for a moment the changes in the salary scale assumptions and focus on the interest rate differentials. What we are then looking at is the degree of margins that are being built into the employer contribution rate by using an actuarial valuation rate that may be substantially less than the market value on the asset side of the liability.

We are also doing projections where you project the number of employees into the future years, do some number crunching and come up with a series of actuarial valuations. On the asset side you can either put in the assumed actuarial valuation rate of interest, some other rate of interest, or allow the client to select his best guess as to what interest rates might be. What you're looking for then in a five or ten year projection is the employer contribution and how sensitive is that to different changes in the interest rates.

Finally, a topic that has gotten a lot of attention in the last couple of years is immunization with dedicated bond portfolios, which is really a giant step forward I think. In effect, we are trying to match benefit payments and coupon payments on bonds. It's a little stricter in that you have to physically force a bunch of transactions to buy a particular set of bonds, you have to monitor the bonds, put a fence around them and say that the income on the repayment principal

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on those securities will be used solely for the benefit payments on this particular piece of liability.

I think that bond dedication is, in effect, the same concept as this new method which I've chosen to call the "imputed valuation method". I have read eight articles by eight different actuaries with eight different names for this method. Let's call it the imputed valuation method for now. The imputed valuation method has several advantages over the dedicated bond portfolio and we'll get to those in a minute.

In short, this imputed valuation method is basically the offsetting of future liability payments by future income payments. We don't really care what the discount rate is, we're simply saying they ought to offset each other. You would calculate the present value for a bond that has a projective stream of coupons and ultimately a principal repayment. You take that stream of interest payments and principal repayments discounted at the actuarial valuation interest rate. What you're doing is valuing the bond to yield the actuarial valuation interest rate -- a parallel technique to what we do with discounting future benefit streams.

You value the present value of benefits as you normally do, typical projections and salary scales, turnover, etc. That part of the liability side of the balance sheet would stay the same. I think it is really a compelling argument, the foundation of which is that \$1,000 benefit payment in the year 2000 can be said to be directly offset by the \$1,000 of coupon or principal repayment in the year 2000 and that impact of that transaction on the balance sheet today in present value terms should be 0. I submit that using typical valuation techniques, it is not 0 at all.

What are some of the advantages of this imputed valuation technique? I think the overwhelming advantage is that it satisfies the intellectual imperative of treating the asset and liability sides of the actuarial balance sheet consistently. It removes the implicit margins that are in the typical actuarial balance sheet -- e.g. liabilities calculated at 7% while market rates today are 12% or 13%. We've got some implicit margins that we try to look at by doing the scenarios and the matrices that Marty talked about. He probably worked on them trying to quantify them but we are always approximating.

This method is a direct frontal attack to say if we value both sides of the balance sheet, same rates, what impact does that have on the employer contributions? It substantially lowers the degree of uncertainty that our actuarial interest assumption will be not realized.

So far as bonds are concerned, we're simply using those coupons to pay certain benefit payments. The error in estimating the interest rate to be realized on that portion of the asset is zero. The only remaining error is the rate of return to be realized on the other types of investments and on employer contributions yet to be made. There, the proposal might be to use a typical technique, use your 6, 7 or 8%. By then you've minimized the portion of the total assets on which you are estimating what the interest rate will actually be.

This imputed valuation method is far less volatile than using market values. It's really insensitive to changes in the market interest rate. If we were to do such an imputed valuation today at say 12% interest and interest rates went to either 8 or 18% to the extent that we are using imputed values for the fixed income portion of our portfolio, we don't care what happens to the market values of securities, we are using the imputed values of the securities and we are protected, if you will, from changes in the market values of those securities.

Finally, it's relatively simple to do those calculations, tedious perhaps, but for an actuary who is doing all of these projected benefit payouts and all this discounting on the liability side certainly discounting a few streams of coupon payments and getting the present values of principal repayments is a simple arithmetic exercise.

What are the disadvantages? I think the overwhelming one is trying to explain the method to the clients. Again, I read six or eight papers and had to read them three times before I was sure that I understood what the methodology really was. I'm still not sure that I do, but trying to put myself in the place of explaining that to the client, I could easily see getting some very confused looks on the faces of my clients.

Secondarily, there are the ERISA rules, thou must use some variation of market and must be within the stated corridor, etc. The proposed solutions to that in these papers is to make the adjustment to liabilities. The adjustment to liabilities (rather than assets) would be then this imputed value of assets less the market value of assets. Then simply use the market value on the asset side of the ledger, take this net adjustment and put it on the liability side as an adjustment to your otherwise calculated liabilities.

I suspect everybody in this room shares one of my concerns and that is in the last analysis is the government right anyway. Government regulations are like the golden rule -- they've got gold and they make the rules, but that doesn't mean that the government is right. I think maybe they made this rule about using the market value without having looked at this imputed valuation method, particularly since they made the rule ten years ago and few actuaries were using this valuation technique ten years ago. Maybe we need to open a bit of discussion with the IRS.

The third major disadvantage is that this method is untried in the USA, at least in the sector of the market I described initially. It is being used in practice in two areas. One of the very largest plans in the USA in the private sector is using this method with, I think, some open questions about what the IRS is going to say if and when they understand what's being done. Secondly, in the public sector, which is basically exempt from the ERISA asset valuation rules, and which typically has a much larger percentage of fixed income investments. I think the surveys show that the typical private sector plan is about 40 percent in fixed income. The typical public sector plan has more like two-thirds in fixed income. The impact of this method in the actuarial balance sheet for a public plan is a

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much more significant item. Of the very largest public plans that I have heard about in the last couple of weeks, virtually all use either this imputed technique or some variation thereof. Several notes and comments from reading: First, I think the imputed method is better than the amortized value technique for bonds.

When the interest rates are rising and you are using amortized value if you sell a bond in that market you're going to have a realized loss, which under the amortized basis must be realized and filtered through the actuarial process. This could create a tendency for managers and plan sponsors not to actively manage that bond portfolio for fear of having to recognize the losses. The imputed valuation method does not have that flaw. We don't care what happens to the realized gains or losses, we're going to use the imputed values. I think that's a better technique.

I think it's better than the dedicated bond portfolio, because it does not force any series of transactions to purchase any particular set of bonds and does not require monitoring those bonds.

I don't think it creates any propensity to buy bonds. One of my first questions was that if you have a 6% coupon bond, the market value of which is much less than the stated value, will the method in effect encourage putting all new money into 6% bonds because you then change the market value from X dollars to X plus a large amount, and therefore we're creating a propensity to buy bonds. I don't think that's true because we don't care what the market values of the bonds are. We will tell the money managers to buy the best securities and manage the investments to the best possible advantage of the participants. You don't have to buy bonds because if you write up the bonds by 30 percent, we're not going to recognize it anyways, so don't worry about that.

It's not appropriate for a short term solvency test. You can't use these imputed values for check writing purposes. For that kind of an actuarial analysis you have to use market values.

One of the more interesting questions is can this methodology be applied to equities as well? I think the overriding problem that I have with that technique is that the basic dividend stream is not easily predicted. So, you enter the arena of discounting future dividends with a lot less confidence than the discounting of future coupons. The strong of heart proceed right ahead and come up with the basic scenario that we would presume that all of the equities could be sold right now at market values which market value would then be reinvested in a bond portfolio. For example, it might be a bond portfolio substantially identical to the bond portfolio that we already have. We then proceed with the imputed valuation method and have an imputed valuation value of equities on the asset side of the ledger.

One other problem is that the bonds could default. You set up this magic stream of offsetting income and benefit payments but what if one of the bonds defaults. The proposed actuarial technique for dealing with that risk is to discount the bonds at the valuation interest rate plus a small fraction, which small fraction would be

deemed to measure the probability of default on bonds. There are a large number of studies around that show what bond default percentages have been over different periods of time. You might also look at the quality of the bonds and be aware of that when you set that extra discount rate.

Finally, it may be too expensive, and it may not even be a material item for small plans. In the typical small plans that I deal with, the biggest argument of the year is how big is the actuarial fee, not how good the numbers are or how appropriate the answers are.

Finally, the imputed valuation method really responds I think to a paragraph that one of the authors included in his article, which is a quotation from the Academy of Actuaries guidelines about how to calculate present values. It's a strong statement that says that if the actuary is going to compare present value of benefits with market value of assets, then the actuary should either recognize that inconsistency or revalue the liabilities on an interest rate consistent with the market valuation of the assets. I think this imputed valuation method is a giant step in that direction. Simply using market value of assets and six percent discounted liabilities is clearly ignoring that directive from the Academy.

MR. DEAN: Thank you, Ray. I think there's a lot of food for thought in those comments and those ideas. But before we open up the floor for questions and comments, I wanted to say a few words.

I think as you've heard our panelists this morning talking about the asset management process and modeling and a better approach to valuing assets, you see that we are making progress in wrestling with the asset/liability relationship in retirement plans. One major tool that's being developed now is an integrated model of the assets and liabilities of the pension plan.

This integrated model would include both a liability model and an asset model. The liability model would be similar to what Marty is using. It would be a model that would project cash flows for benefit payments and would project future funding levels, future contribution requirements and future pension expense accruals.

The liability model would be built from a number of elements. One element would be the actuarial assumptions to be used in the current and future valuations. Another element would be a separate set of experience actuarial assumptions; that is, what experience would be used for projecting the participant population. This set of assumptions may be different from the actuarial assumptions. Of course, another element would be the plan provisions themselves. Still another element is the participant population, both the population for current active employees and retired employees but also assumed future new entrants. A final element would be the assets and in this way the asset model is related to and effecting the liability model.

In turn, the asset model could be built in different ways with various degrees of sophistication. One approach is to look at asset categories and to develop for each of these categories an assumed real rate

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of return (that is, a rate of return above inflation), to specify a standard deviation or pattern of variation around that real rate of return and to look at the correlation between the returns of different asset categories. This correlation relationship can be quite important because some types of investments tend to move in the opposite direction and some seem to move independently. Finally, you would need to have an allowance for inflation which would be reflected in both the liability and asset models. This could be simply an assumed rate or it could be something a little more sophisticated such as an assumed long term inflationary trend, a chance element of inflation and some assumption as to how inflation is linked from one year to the next.

The asset model would build upon elements such as the portfolio mix or the percentages of assets in the various asset categories. Also bond or fixed income maturity patterns would be used.

With this kind of model, you can answer the "what if" questions that face the plan sponsor, the asset manager and the actuary. What if we changed the investment mix or investment strategy of the plan? What if we change the actuarial cost method? What if we change the funding approach, trying to lead to some balance between assets and the present value of vested benefits as Marty was discussing, as opposed to the pattern that might automatically result if you simply follow some actuarial cost method and contribute the maximum deductible contribution each year.

Another powerful tool that you could use if you have a model of this type is to look at the "opportunity cost" of any particular asset strategy. The opportunity cost is defined as the contribution requirement under a particular investment policy alternative compared with the contribution under some benchmark policy. Then with this stream of opportunity costs, we can take a present value, discounting at the employers internal rate of return. Then with this present value of opportunity costs, the plan sponsor can decide which investment policy or which alternative is financially the most beneficial.

This is the trend. We are seeing these models develop with various degrees of sophistication, and it gives people interested in the asset side, the liability side and the relationship between those two elements very powerful tools that we'll be able to use in the future.

At this point, we'd like to open up the floor for your questions or comments.

MR. CHARLES TROWBRIDGE: I think we're missing something in the sense that this discussion so far has been about defined benefit pension plans. Defined benefit pension plans have entirely different

investment strategy characteristics than defined contribution plans. In the defined contribution plan the investment performance, good or bad, directly affects the employee, and in the defined benefit plan the investment performance, good or bad, affects the employer but not the employee. Certainly if you're investing for specific employees, and each employee is going to know how his particular fund did that year, you are in a different strategic environment than an asset manager trying to convince the employer that he has done well. In one case you've got an audience of perhaps a thousand people or so who are looking down your throat as to how you did that year and it's certainly a short term look, the other case is just like having a bunch of individual deposits in the bank and the bank has to convince each of those investors that they did well that year. That's entirely different thing than convincing the sophisticated employer. So I don't believe Mr. Cooper would use some of the strategies he was talking about on a defined contribution plan.

We all know that defined benefit pension plans are slowly losing out to defined contribution plans and the whole investment situation for defined contribution plans just has to be different. It's a little bit more like a savings and loan association has to invest to convince its own members how well it has done.

MR. COOPER: You're quite right, of course. I didn't mean to leave out the profit sharing type plans. My comment to you would be that I would be even more attentive to the aspects of the loser's game with those kinds of plans than I would otherwise.

MR. DEAN: As you pointed out, in a defined plan the risk or possible reward of good investment return accrues to the employer whereas in the defined contribution plans that benefit or penalty falls upon the employee, and the employee psychology may be different than that of the employer.

The employee is not likely to view this in as long a term as an employer. However, in the defined contribution plans you are going to have many of the same kinds of investment considerations. You are not going to be looking at projected cash flows but you are going to be very concerned with the potential risk and return in asset categories. Risk is particularly important because you have more to lose with the employees with a year of poor investment performance than you have to gain with a year of good performance. I think the psychology of employees is that they like to see some positive earnings on their money every year and they get quite unhappy if there is a negative return even if in some prior years they had had spectacular returns. Those things are forgotten once they're past.

MR. STEMPEL: You talk about no win; I think that with a growth of individual account plans, it may be a no win for the employer even if you give the employee the choice to move money from one investment option to another at some scheduled time.

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If you don't want to have an unlimited choice for the employee, somebody's got to decide what investment vehicles will be available, and the rules about moving funds between investment options must be published. The employee could have a complaint about why the employer didn't let him switch out of stocks or bonds at a particular time.

MR. COOPER: The single most dangerous thing that I see is defined contribution plans that are invested in a single security. Typically, it's a fast growing company. Southwest Airlines is an example of that. The entire retirement income of Southwest Airlines employees depends upon the performance of that company's stock. Although this has been a very fine performing stock, it is in fact a very, very dangerous way to invest a retirement fund.

MR. ROBERT M. KATZ: Not to put Mr. Cooper in the spotlight even further after Mr. Trowbridge's fine comments, but, our plan is one of the largest plans in the U.S. and we play investments to win and not only to win but to win big and we've been very successful at it. I wonder if Mr. Cooper could comment on the applicability of his loser's game theory to the size of plans. Our experience has been that once we started to play to win, we were much more successful than when we played not to lose.

MR. COOPER: If you'll excuse me saying so I always have somebody trying to prove the rule by the exception. You know stories of success are legion and somehow people always want to say look at that guy over there, he made a hundred million dollars doing it his way -- why don't we do it that way ourselves. What I had to say applies with greater degree of emphasis the larger and larger the plan.

If you have four billion dollars invested in the equity markets, whatever percent of your assets that might be, it's almost impossible for you with four billion to beat the averages. Yet you'll see companies like GTE, for example, with a hundred and fifty-seven investment managers, feeling somehow that the mix of these hundred fifty-seven are going to have some value added. It seems to me that the larger the plan, the more compelling the argument becomes to simply index it all, pay a lesser fee and take what the market gives you. I appreciate, however, the fact that your record is excellent.

MS. ANNA M. RAPPAPORT: I have two questions for Ray. First, how do you handle the reinvestments in that method. The second question concerns the uncertainty under ERISA as to whether this is acceptable or not even when it's being handled on the liability side. Suppose it's not in accordance with the regulations and there is a problem, what are the professional liabilities and responsibilities of the actuary and what do you do to protect yourself against them?

MR. PINCZKOWSKI: I guess we could pay our liability insurance premiums. But I think the more practical answer is to open a dialogue with the IRS about the valuation technique. I would be a bit reluctant to use the method on a very large plan with a lot of risks both for

the plan sponsor and for me without more comfort from my peers or the IRS. As to reinvestments, if the income stream is going to be grossly disproportionate to the benefit stream it is purported to offset, you need some adjustment to the methodology. Otherwise, the presumed reinvestment is at the actuarial valuation interest rate.

MR. DEAN: As far as dealing with the IRS is concerned, someone has got to stick their head up over the rock to see if it gets shot off so the rest of us will know. The government has a vested interest in keeping rules static. Governments don't like to have rules that change all the time so once they set up regulations, they would like them to be around a little while. On the other hand, they don't have an inherent interest in being unreasonable. If there is a better way to do something, I think, in the longer term, the government may be persuaded to the logic of it.

MR. M. DAVID R. BROWN: We have been using the imputed method or something very close to it with a very large public sector plan in Canada. I describe it as a "discounted cash flow" method in that it takes the fixed income securities and discounts the coupons and maturities at the same rate that we're using on the liability side.

I have a number of reservations about it which do not apply in this particular case because this fund happens not to be in marketable securities. The employer is a provincial government, and they have special issue bonds to which they attach a rate of interest each year that reflects the long term yield on the currently traded bonds of that province. So, you get a new money effect, but you don't really have any buy and sell opportunities.

It seems to me that the biggest problem with the method you referred to, Ray, is that it is not neutral to the manager's buy/sell decision if he has the opportunity to trade the securities. It's very non-neutral. You may also have this paradox which you referred to: if he buys a bond today, immediately, you get this big write-up. That's certainly not going to go unnoticed. An important characteristic of a good asset valuation method is that it ought to be neutral as far as the manager's investment strategy.

It seems to me that the only way out of this inconsistency that you are trying to resolve by using the discounting approach on the asset valuation method is to use something like a market rate on the valuation of your liabilities. Where it seems to lead is to some kind of select and ultimate approach where you use a market rate for something like the average duration of your assets, which is usually a lot shorter than the average duration of your liabilities, and then go to some lower rate for the period beyond that.

I think another real problem with the method for a typical portfolio is that nobody really has a very good answer for the equities. So,

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on the other hand, if you fall back to the market value approach, that problem goes away. Perhaps the final question that you're left with is what sort of an ultimate rate should you use? If you go to select and ultimate approach, you can probably arrive at a suitable select rate fairly easily, but the question of whether you should be using 4% or 7% in the ultimate period is a difficult one. Perhaps in practical terms it doesn't matter that much, because if you use a high rate during the select period, the question of what happens beyond the select period doesn't have very much financial impact.

MR. THOMAS P. BLEAKNEY: I'm the one whose head is stuck up at the moment because a very large pension plan has my name signed to the bottom of the valuation report and their valuation uses the imputed valuation method Ray described.

I'd like to pick up on what Dave just said because the very problem that he identified is one that we recognize; that is, you can influence the investment decision by showing this huge write-up. So an element of this which we have used is a select and ultimate assumption tied to the assumed rate, calendar year by calendar year, that the monies will be invested at (that is, the new money rate). If our assumption is correct in terms of 1984 investments this will have a neutral effect upon the valuation. Now, I appreciate that still introduces a little bit of Alice in Wonderland but to me the end result is more reasonable than to simply recognize that any investments we do make this year are going to create very substantial actuarial gains.

I would like to address a couple of the disadvantages which Ray touched upon but which perhaps I can emphasize a little more strongly. Communication with plan sponsors is a very difficult problem. I use this particular technique with essentially every public employee client that I have and generally, once they've gone beyond the threshold, they understand what's going on even though it's a very tricky thing to understand. Once they've gotten to that point, there is complete satisfaction. But I have a situation with a very large state at the moment where I wasn't able to do that; instead this has gotten me into a sort of a negotiating process involving of all things, the legislative committee. You try to explain this to a legislative committee (for that matter, try to explain anything to a legislative committee) and immediately you are into some maneuvering like you're trying to put something over on them. So far it's a draw and I'm not at all sure what will prevail in that respect, even though I do believe in the long run it is a better method for putting a measure on what their liabilities are.

The other disadvantage that I would like to address gets back to the old explicit/implicit terms that I haven't heard for some while. I think it is important to recognize that this particular technique puts an explicit valuation on all the securities that you treat that way, and I think there is a mental set that we actuaries have that ties to the implicit investment return and salary increases or potential cost-of-living increases. You've wrung out the sponge, and there's no money left from future gains on these assets because you pinned them down just as you would have in a dedicated bond portfolio.

MR. TROWBRIDGE: We have come to the subject of the relationship between the valuation of assets and the valuation of liabilities. I assure you it's not a new problem. It's been around for a long time and it's not only around on the pension side, it's around on the life insurance side too.

Life insurance companies value their fixed income assets at so called amortized value. What is amortized value? It's the present value of all the income stream at the rate at which those securities were bought in the first place. It's not a single rate. It's a mixture of rates but basically today it might be around 9 or 10%. Then what does the insurance company do with its liabilities? It values liabilities at 4% or 4-1/2%. What have you got -- inconsistent assumptions. Garbage in, garbage out. You value your assets higher than your liabilities.

That problem has been recognized on the insurance side, but they haven't quite figured out what to do about it.

Now we come to the pension plan situation. It's exactly the same thing. If you value your fixed income assets at market, you are valuing today at 12 or 13% or something like that. Liabilities, on the other hand, are valued at 6%, 7%, or 8%. Whatever that unfunded liability is, it is sure overstated. If you use amortized values it's probably a little better but it's still pretty bad.

So, any time you value fixed income assets at anything different than your actuarial rate, you are just inconsistent. Your answers are wrong except that you know they are on the safe side. At least today they are on the safe side, and they won't always be. Suppose interest rates really dropped and suppose that market values were really based on 4% today, then you'd be using market value of assets, you'd be valuing them at 4%, where your liabilities will be valued at maybe 6% or 7%, and you've got the reverse situation. So the problem is really severe as to asset valuation on the fixed income side.

Now on the stock side, that's another matter. You don't know how to value those except by market. I don't get too worried about market value of the stocks because there's no other alternative. But the market value of fixed income assets or even amortized value of fixed income assets just doesn't make sense and it's high time we all realized it.

The problem, of course, is partly due to ERISA because ERISA seems to put you on the spot as to using at least some form of market value. I think ERISA really was intended to be on the stock side but I'm not sure it hasn't slopped into the fixed income side too. Now the FASB is really putting the pressure on it because they say market value and no nonsense. Now, there's just no question about it, if the FASB rules, you will use market value of all assets including fixed income, and you use whatever you use on the liability side. Again, you've got a big overstatement of that liability. Whether the FASB say will prevail on that I don't know, but some of us are going to point it out to them, or already have. What you do about it is another matter.

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We could value the fixed income assets at the same rate that we use to value liabilities, that's one way to do it. Another approach is to value the liabilities at the market asset rate, something on the order of 12%. The liability is going to be bigger than the assets most of the time, and if you value both at the lower rate, then the excess is valued at the lower rate instead of a higher rate. This is the more conservative way to do it and I think the way it makes more sense. Anyway, the whole question of asset valuation is really the key thing here on our defined benefit plans.

I'll come back to my defined contribution plan. Here we don't get into this question at all. Assets are equal to liabilities, but how you value those assets determines what kind of interest performance you're going to pass on to the employee. In other words, the question of how well the employee does depends a great deal on what kind of valuation you should use. If you are using market values like you probably would for equities, it just works like a mutual fund. Then you have assets going up and down and people are disturbed by that. You can also do it for a fixed income securities on a book value basis on investment year principles, but it gets pretty complex. So the asset valuation problem becomes a very key matter in the defined contribution plan too, but for a different reason.

Actuaries have made the mistake in this country for years of looking at the liability side of everything, ignoring the asset side, and it's just high time to get off of it. The British actuaries never made that mistake. They are in the investment world over there.

MR. DEAN: I think there are a couple of lessons to be learned from your well chosen comments. First, that pension actuaries can learn things from the insurance actuaries and fundamentally face many of the same problems. Secondly, if not outright neglect, the asset side is something that actuaries have certainly not solved. We have become very sophisticated in making calculations of multiple decrement problems, but we are very primitive when it comes to these asset calculations.

I would also observe that another possibility in valuing assets and liabilities would be to value the liabilities at two different rates. You would value part of the liabilities at the market asset rate but only that part that is 100% offset by or matched by assets and then value the remainder of the liabilities at a different, more conservative rate.

MR. STEMPEL: I might add that the dual interest calculation is sometimes used in multi-employer plans for calculating the unfunded vested benefit. The funded part of the present value is related to the PBGC assumptions and the unfunded part is valued at the actuary's assumed rate.

MR. KEN E. JAMES: In the period of rising markets, a large number of lay-offs, threat of merger and acquisition, takeover through the use of the company's pension plan assets, there is an increasing resistance on the part of plan sponsors to having too many assets in their pension plan. Most of us have plans that are approaching a full funding limitation, maybe even approaching a zero expense, for perhaps the first time in the plan's history. You get into that situation and then you find plan sponsors are really not particularly interested in incurring actuarial fees at a time when the contribution is going to be zero for two or three years. My point is in the discussion of modeling and actuarial projections, what role do you feel that the actuary should have during that period. It seems intuitively there may be even a larger role that the actuary should be playing in terms of what's the likely future to be of these plans.

MR. DEAN: I think that the purpose of asset/liability modeling is to provide answer to the "what if" questions. You have to understand who is the ultimate decision maker in a given situation. The plan sponsor may be the ultimate decision maker in some of these situations. The actuary, doing his job properly will give that plan sponsor all the information they need to make an educated decision.

The actuary, of course, also has a responsibility to the plan participants not to do something that's going to affect their benefit security adversely, so there's that professional and fiduciary standard as well.

Modeling is very appropriate and is a very strong tool in the kinds of situations you're talking about. Sometimes you're going to be looking at the longer term; other times you are going to be looking at what happens right now -- let's compare the assets right now with potential liabilities right now -- and that might affect your decision.

MR. STEMPEL: I think that the FASB proposals would highlight the apparent excessive assets over liabilities. As I understand their proposal, the market value of assets is offset by the "measurement valuation allowance" which is certainly a confusing thing. They claim that our work is incomprehensible to anybody but us but they're going to add a new level of confusion -- except for one thing and that is everybody starts out at the same level of confusion. The measurement valuation allowance is supposed to allow the amortization of the gains and losses that occur from changes in the market value of the assets. But I think the pension plan will be attempting target because there will be a simplistic statement of this excess asset which may be entirely different from the status of the plan if it really were to terminate.