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SELECTING ACTUARIAL ASSUMPTIONS

Moderator: MARY HARDIMAN ADAMS
Panelist: KENNETH A. STEINER
Recorder: EDOUARD H. TITTLEY

- ASB update on status of the ASB standard to provide detailed guidance on setting economic assumptions for pension plans
- Large and small plans
- Analyzing actuarial gains/losses
- Expense versus funding

MS. MARY HARDIMAN ADAMS: This session is concerned with selecting actuarial assumptions, specifically economic assumptions, for measuring pension obligations. The material we're going to present is based on exposure drafts being adopted by the Pension Committee of the ASB. I am the chairperson of that committee. Ken Steiner is also a member of the committee and a very heavy contributor to it.

The purpose of the draft that we are preparing is typical of all the material that is done by the ASB. First and foremost, it provides guidance for actuaries. We wish to assist actuaries in looking at pension plans and selecting the proper economic assumptions. In addition the draft is designed to help users of our work product understand what actuaries consider in determining their assumptions. These users will be clients, the government and people with a casual interest.

MR. KENNETH A. STEINER: Before I discuss why the standard is needed, I would like to provide a little background on actuarial standards in general. One purpose of an actuarial standard is to protect the profession's reputation and to assure the regulatory authorities that actuaries will act in the public interest. As Mary indicated, the actuarial standard should provide guidance to actuaries and give users an idea of the process. Standards will also increase the accountability of actuaries who deviate from these standards and cannot support their particular deviation.

In this project – the selection of economic assumptions for measuring pension obligations – at least some of the people on the Pension Committee felt it would be beneficial if the Internal Revenue Service (IRS) accepted the standard developed by the ASB as essentially compliance, rather than having the IRS question, particularly, the interest and retirement rate assumptions. Up to this point, the committee has only focused on economic assumptions and has taken probably 1.5-2 years to just get through a couple of drafts on the selection of economic assumptions. However, in the opinion of some members, it would certainly be nice if the IRS accepted a standard promulgated by the ASB as at least satisfying the requirements for determining maximum and minimum contributions.

In 1988, I believe, Recommendations for Measuring Pension Obligations became Actuarial Standard of Practice (ASOP) No. 4. Recommendations A, B, and C were essentially codified by the ASB into ASOP No. 4. In that standard, all areas of measuring pension obligations were covered and only a very brief section was given to the selection of actuarial assumptions. The ASB felt that this section on actuarial assumptions needed to be both expanded and made more specific.

The Society of Actuaries also had a study note, "Selection of Interest Assumptions for Pension Plan Valuation" (461-23-89), that involved choosing actuarial assumptions. The way I view standards -- and not everybody on the Pension Committee or the ASB views standards the same -- is that they complete the sentence "the good actuary should do . . . ." Hence, the current guidance in ASOP No. 4 gave general guidance with respect to assumptions. The study note, which was part of the actuarial literature, also gave general guidance with respect to selecting an investment return assumption, and it had a number of statements such as "The good actuary should do X" or "The good actuary should do Y."

I would like to provide some background. ASOP No. 4 said that the good actuary should reflect assumptions in combination, reflect best judgment of future events, and consider actuarial experience with emphasis on long-term future trends rather than recent past experience. He or she should take into account information from other sources such as plan sponsors and investment managers. The good actuary should consider the reasonableness of each assumption independently. He or she should consider not only information on general trends, but specific information related to the plan that could justify different assumptions. Furthermore, the good actuary should pick an investment return assumption with regard to the method used in valuing assets.

With respect to the study note, the good actuary should choose assumptions that are reasonable in the aggregate. For example, the study note indicated that the use of liberal interest rates may be appropriate if the turnover assumptions are conservative. In small plans, if a salary scale is not used, then the good actuary should recognize that this may necessitate a lower investment return assumption. Additionally, he or she should consider the effects of the actuarial cost method in selecting an investment return assumption.

There are a number of statements in the study note that members of the Pension Committee found disagreeable and there are a number that obviously we supported. For example, in the study note the good actuary typically considers using a lower interest rate for a plan with a flat benefit design. Similarly, it is typical that lower rates of return are used on plans that respond poorly to inflation. With regard to these issues, the committee has decided that the good actuary should not necessarily support them. But there are certainly statements in the study note and obviously in the ASOP No. 4 that the Pension Committee does support, and the draft subsequently supports them as well.

We do have standards with respect to selection of assumptions. However, the board felt that the standards themselves were not particularly well defined, and thus the Pension Committee has taken on the project of trying to provide more specific guidance to actuaries in selecting investment return assumptions while remaining flexible. There are two extremes that we see. The ASB could dictate that all actuaries must use a rate within 20 basis points of the Treasury bill rate at the beginning of the year. The other extreme would permit the use of any rate. Consequently we've tried to find an approach that lies somewhere in between the two, but obviously we're looking for guidance and this is a controversial subject.

MS. ADAMS: In developing these standards, I should give you a little background about the committee. The committee comprises very strong individual thinkers, and trying to get a consensus out of the committee is quite difficult. However, we agreed to agree on certain principles that offended none of us. We felt that we wanted to cover the normal practice in everyday situations. When you think about the arrays of plan design, funding methods, and different priorities of plan sponsors, we decided that we could not possibly be completely comprehensive, and we therefore concentrated on everyday valuation situations. In passing reference, we did not aim any of our material towards specifically complying with any regulation. Rather we wanted this to be something that would be good actuarial practice by itself, and, once this goal was achieved, provide a basis from which the use of extraordinary assumptions could be clearly traced.

I'll start on the technical considerations. The first thing to consider is that in the past the concept was that assumptions in the aggregate should be reasonable. We very carefully avoided the explicit and implicit words -- the "bad" words. Nevertheless the word *aggregate* was implicit and we now feel that, because of the level of technology today, we have the tools to derive explicit assumptions that truly reflect what we predict will happen.

We have to think about how they must work together. When you think about the benefit calculation side, you use economic assumptions to project the amount of salary-related benefits that are to be paid. Then you need a discount rate that has to correspondingly bring their value back to the current situation. We cannot deny that there must be a reasonable relationship between your various assumptions. You don't want to go forward with an inflation rate of A and return assuming an inflation rate of B. The logic must be there.

In retrospect, how do you come to a conclusion about the appropriateness of your assumptions? You can look at past experience, current conditions, and, more importantly, trends. You may be on the crest (or trough) of something and know it cannot last. Still, you should look at the trends and current expectations. All of this is being projected forward. Once this has passed, you must come to a conclusion about what to expect in the future. That is the hard part. You can analyze trends, but formulating future expectations is ultimately necessary.

One of the things we have noted is that the selection of assumptions involves not only science but also judgment. We cannot deny that, in selecting actuarial assumptions, we are employing both scientific and subjective aspects.

MR. EDWIN C. HUSTEAD: It may be a little early in the discussion, but let me talk about using 5% as an interest rate. Maybe we can get a discussion going on that topic. Most of us, I assume, are familiar with the IRS' small-plan audit program and the IRS' position that 5% is too small an interest rate to use. I've heard a lot of discussion and seen a lot of outrage about assuming an interest rate of 5%, and whether the IRS can force us to use 8% instead. It all boils down to one thing, in my opinion: If you ask the lone actuaries who are using 5% in their back rooms why they are using it, they will respond that it's the lowest rate they thought they could "get away with" for maximizing their client's contribution.

We want the IRS to accept our standards and use them to set interest rates; however, as long as these standards are defined loosely enough to include 5% interest rates, I think it will continue to ignore our standards and substitute its own.

MS. ADAMS: Actually, the one thing we wanted to avoid was any type of "cookbook" in which you would combine all the ingredients, mix them, and come up with a number. When we get to the gist, what we really have done is tried to describe a system of getting a range of logical interest rates, and, after taking into account other factors, narrow that range down to the point where you select an interest assumption.

I don't want to comment on the small-plan audit program. This standard is not out yet and we should not take a position on either side. Member of the SOA are working on these court cases and representing both sides. Hence, I don't think it's fair to them to take a position here and now, but your point is well taken and I do appreciate that point.

MR. STEINER: I agree with Mary that you have raised a very good issue, and as Mary eluded to, the members of the committee don't always agree. I think that both your comments and the comments of when and if this proposed standard comes out as a draft, and pertaining to whether we want a more specific rather than a looser standard, would obviously be appreciated by the board. One of the purposes of the standard is to give us credibility in the eyes of the public. If 5% is not regarded as "credible," but we have a standard that allows an actuary to use 5%, then I don't think that the standard is worth the effort. I totally agree with you, but I'm not going to choose sides concerning the question of whether 5% should be used.

MR. ALBERT JACOB: I would like to comment on the generality of the standards. Early in my actuarial career, we as actuaries were distinguished from statisticians in that statisticians were anxious about purity of each assumption and each result; whereas actuaries were interested in the accuracy of the financial result. It was unimportant to us whether the interest rate, mortality rate, lapse rate or whatever was realistic. The financial projection, however, was extremely important to us.

Apparently the ASB is taking the reverse role. That is, you are struggling to get accuracy at each level of assumption. Similarly you seem to be struggling to satisfy the IRS' desire that actuaries predict accurately the future financial costs with some degree of conservatism. In reality the IRS would like us to predict future costs as low as possible, although the future cost would be inaccurate.

MS. ADAMS: I believe that initially the use of implicit assumptions was primarily a result of not having the computer facilities to obtain more accurate results. If you start with as good a set of assumptions as possible, you should get the best results. I think that the compensating factors that were used over past years were simply a result of related difficulties.

I can remember in the 1950s when somebody wanted to change an interest assumption. It involved calculating commutation columns and multipliers and, in the pension field, multidecrement multipliers. This took weeks of work, so you tried to avoid a change in interest assumption. Rather, you were tempted to say that inflation was

increasing but the salary scale and the discount rate compensated. This was simply a matter of practicality. Now we have computer facilities that are able to blend the various assumptions together. Again, I emphasize that the package should be logical and you should get a better work product.

MR. STEINER: I think you have raised an excellent point. The current guidance in ASOP No. 4 says that actuarial assumptions in combination should reflect the best judgment of future events. For the latest unreleased draft, we've had a great deal of discussion as to whether we should keep the wording in ASOP No. 4, or drop the requirement that the assumptions be reasonable in combination. One of the concerns and one of the goals of the ASB is to protect the reputation of the profession. Therefore a good actuary may use assumptions which, in combination, reflect reasonable expectations of future experience. However, if he or she is using a 5% interest assumption, for example, then such practice could be potentially damaging to the profession's reputation. At this point it's an issue with which we're struggling.

MR. CHARLES BARRY H. WATSON: The whole question of explicit versus implicit assumptions, and the arguments as to which are better and which are worse have a long and glorious tradition within the profession. Nonetheless I think that there is little doubt that if you can deal with the explicit assumptions reasonably -- and we can do it now with computers and other facilities that we have -- you have a much better likelihood at getting things right. For example, I can recall a situation where we assumed that there was no turnover in a particular group. The group was small, so we didn't worry about it. Someone then asked, "Well, suppose we change the vesting assumption. What is that going to cause? What difference will that make to the cost of the plan?"

If you look at the question of interest rates and salary scale, you realize that you can offset them. However, unless you are very careful about what happens in the postretirement period, you're making an implicit assumption that pensions are going to be increased. Furthermore, there is no necessary relationship between the salary scale and the interest rate. As interest rates go up, the gap does indeed begin to vary. Consequently, how do you deal with graded salary scales that change by age and service, that seem to make more sense under many circumstances?

The people who yearn for the simplicity, security and happiness of implicit assumption allowance are truly dwelling in the nineteenth century. I think we at least need to progress to the middle of the twentieth century if we are to be confident.

MR. JAMES L. CLARE: The reason I'm speaking on what appears to be an American topic is that I am virtually a founding member of the American Academy of Actuaries and we have parallel discussions in Canada. We had one at the Canadian Institute of Actuaries about a year ago and a lot of people spoke along the same lines as Charles B.H. Watson, as would the regulators. The regulators would say you can get 9% or 10% on bonds, so why not have an 8% assumption? This is understandable, but suppose the plan is a flat benefit plan or a career-average plan with no updates.

As you look down the road -- as actuaries do -- 30 or 40 years, somebody age 20 will be expected to die at age 99 or at least have a long lifetime. It will be wildly irresponsible for that plan to assume 8% forever unless you think that inflation rates

are going to be at high levels forever. I see you have the solution and the salvation -- select and ultimate.

MR. ALEXANDER SUSSMAN: My comments might be somewhat controversial, but it seems to me that since 1974 we've been discussing implicit and explicit assumptions. If we haven't got it right by now, I don't think we're ever going to get it right. I think the major problem that we seem to ignore is the fact that our clientele is being reduced dramatically. There are very few -- if any -- defined-benefit plans being created, while many are being terminated. I think the issue concerns not so much actuarial assumptions, which should all be sophisticated by now, but rather the course of the whole product: Are actuaries even doing the job and why do clients not wish to have them anymore?

MR. STEINER: Various terms are defined and some of them are actually used in the draft standard. The economic assumptions that we have focused on are inflation, investment return, and pay increase, along with the Social Security taxable wage base and other government indexes that affect defined benefits. I would say of the two years our committee has existed, probably 80% of the time has been spent on the investment return assumption. These items are really all that are dealt with by the draft standard. Does anybody have an economic assumption that they think we're missing?

MR. JOHN M. BRAGG: Mortality.

MR. STEINER: We didn't consider mortality to be an economic assumption, but we'd be interested in hearing why we should include it in the economic assumption discussion.

MR. BRAGG: I would like to say something about the investment return matter and also mortality, which I just mentioned. Starting with the investment return, I've been interested in the subject of inflation and investment return for a long time. I have a book on the subject and I've written papers about tying life insurance to the consumer price index.

I wrote a paper for a meeting in April 1991 in Brighton, England about the real interest rate. It's sort of an offshoot of all the other work I've done. I measured the real interest rate over a 100-year period -- 1890-1989 -- and 4.33% was actually the long-term, 100-year average. This is, of course, is after inflation. The real interest rate varies quite a bit from period to period, but is more stable than either the inflation or the investment return, most dramatically, when inflation is removed from the investment return.

I suspect that the SOA will not allow much more of a real interest rate than this number. In fact, things have gone crazy in the life insurance insolvency world lately partly because of the 12% and 15% rates being paid. Anyway, I don't know, maybe I'm trying to say something that ties in with that 5% rate that the gentleman mentioned. Inflation was 2.8% average. I guess I'm just trying to say that if you get too far away from the long-term real interest rate in assumptions, something is going to go wrong.

Concerning mortality, all pensions do -- or at least should -- end up as life annuities. Our firm is in the business of collecting mortality data and creating mortality tables. We have recently created new 1991 tables, and I can tell you that the experience for 1985 through 1989 was a lot better than the experience from 1980-84 -- close to 10% better. Female smokers were worse, however. Now, I know I'm talking about the life insurance industry but it is still related. Our new nonsmoker mortality rates are considerably better (i.e., lower) than any annuity tables I have seen.

I guess I'm trying to say that the annuity tables we have are too high, because a tremendous improvement has taken place in mortality. Certainly if you're valuing a defined-benefit plan, you're aiming to fund an annuity. I'm just saying that none of this seems to be involved in the way the IRS thinks about regulations.

MS. ADAMS: We agree that the real rate of return is mostly the basis for the investment return assumption. It is a stable element and the inflation rate is the main variable. In addition, when we complete the economic assumptions, we will proceed to demographic assumptions. I think that every pension actuary here is very conscious of the general improvement in mortality. There are all kinds of things that we consider -- progressive tables for example -- but we are aware of the situation. We don't want to mix economics with demographics.

MR. ROBERT J. MYERS: I am a consultant in the field of Social Security. I want to build on one point that Mr. Bragg made, namely the stability of real interest rates. I quite agree with him on this point. However, one other economic assumption that particularly enters into not only the Social Security field but also some private pension plans, such as The United Nations' pension plan, is a so-called real wage differential. This is very simply the annual increase in wages minus the annual increase in prices. For example, if wages increase 5% and prices increase 4%, then there's a 1% real wage differential. Technically, you should take 1.05, divide it by 1.04, and subtract 1.00; however, with the majority of the figures, you can work simply with the real wage differential.

Unfortunately, the real wage differential is not anywhere near as stable as the real interest rate. There's been some controversy about this in the Social Security field in the United States during the last couple of years. If you start 20 or 30 years ago and end in 1989, you can derive almost any figure you want. You can show that real wages have either decreased over the period, or had a healthy increase of maybe 1.5% or 2% a year, by picking the right starting year. There's the art in projecting into the future, as well as the science in looking back at the past.

In the latest Social Security Trustees' Report, the assumption was made that this real wage differential would be, over the long run, 1.1%, which looks very reasonable if you consider some periods in the past. On the other hand, if you consider other periods in the past it's a great overstatement. Consequently, it's very disturbing in selecting economic assumptions for plans where the price level enters into the benefits structure. I don't know of any good answer except to rely on "art," and say that perhaps 1% a year doesn't seem unreasonable, and continue from there.

MR. JOHN B. MOORE: I refer to your economic assumptions. Where are you treating methods of valuing assets in your current draft? Are you putting it under the

generic term of investment return, or are you distinguishing a valuation method from an assumption? I personally think it's an assumption. Shouldn't it be included?

MS. ADAMS: The initial draft was called "Economic Assumptions and Asset Valuation Methods." It was getting so long and complicated that the ASB decided to stick to the one topic of economic assumptions. We considered it a method -- an evaluation method against an assumption. In the paper as currently drafted, it is assumed that whatever valuation method is used, it will over a reasonable future period approximate the market value. Essentially what we have used in developing this paper is the market value of the assets.

MR. STEINER: That closely approximates market value. If we're using market value of assets, we should be using some kind of market-value interest rate. The interest rate methodology, which is really the core of the proposed standard in its current form, anticipates building a market-value interest rate.

MR. WILLIAM DAVID SMITH: The question posed to us, I think, is whether there's something else that ought to be considered as an economic assumption. There is one item that is perhaps a matter of taste as to whether you include it. The standard actuarial model is to calculate a normal cost based on the employees in the system at the time of the valuation date. From that, you derive an unfunded or supplemental liability to fund that liability over a time period, on the assumption that the number of employees included in the system will remain constant over that period. That's not always appropriate. The number of employees may be declining or increasing, and that affects the amount of the unfunded liability payment.

If you're going to use some assumption in this situation, then it's perhaps a matter of taste whether you either call it demographic and include it with the other actuarial assumptions, or include it in the economic set. Whenever I view something other than a level number of employees, most of the time I have included that assumption as part of the economic assumptions for two reasons. First, it's a factor that affects the present value of future salaries over which you're basing payment of the unfunded liability, and it naturally belongs in the section where the present value of future pay is derived. The other reason for deeming it economic is that it's basically an economic consideration whether the number of employees is going to rise or decline.

MR. STEINER: I think we're probably going to deal with that under the demographic assumptions, since we haven't dealt with it under the economic ones. I think it's important to get the preliminary methodology that the committee has for developing an investment return assumption.

MS. ADAMS: I'm not really the "champion" of the building-block school. I think I was the moderator of the arguments that were involved, since some people thought that the building-block school was pretty silly, or, at best, a bit facetious. In any event, I think one of the basic traditional ways that people use to determine the proper interest assumption is to look at the various elements that will go into the components that make up the assumption. These involve inflation and a real rate of return. Furthermore, the real rate of return is really the "riskless" investment plus a

risk premium, plus something we have now come to know as a "tax premium," which none of us had heard before.

There are other elements that you can consider, such as U.S. Treasury cash equivalents or long-term Treasury bonds. All these are significant and you can say that the interest assumption is a function of a real rate of return plus inflation. This is the simplest form. You then have to look at this real rate of return, what it has been historically, what it has been for the last few years, and what inflation is doing. Inflation is the volatile part. I think most people would never think of deriving the interest rate assumption simply by adding the current year's inflation rate, be it 2% or 9%, to the historical real rate of return.

This is where we get to the "art" -- determining where inflation rates are headed. We certainly encourage people to use economic reports to research where inflation may be going, but the final judgment will still be the actuary's. There are different methods of achieving this assumption. Many people look at the rates on long-term Treasury bonds. How close is the long-term Treasury rate to the total of inflation plus the real rate of return? There are many things that you can look at to provide you with checks and balances. Soon you get to a point where you can add these two basic numbers, and the result is completely different from the long-term Treasury rates. You must determine the reasons for this. Is it a current aberration? Is your arithmetic wrong? Are your sources wrong? You have to use checks and balances to find the source of the deviation.

I'm not sure we want to discuss the concept of tax premium. This was initially foreign to most members of the committee. It was described to us as a "good thing" because most of the investments in this world are held by a tax-paying public, and they expect a rate of return net of taxes. Therefore, when you're looking at the real rate of return, you have not only the basic cost of money plus a risk premium -- and people are generally comfortable with a risk premium and understand that stocks are usually riskier than bonds -- but also something called the "tax premium."

This is probably one of our greatest debates. We were planning to include the concept of tax premium in the draft as an appendix. This would let the pension world examine this concept and perhaps trigger some discussion. Hopefully we will get either affirmation that it is truly a genuine component in our nontaxable pension funds, or that a fallacy exists in its reasoning. There would probably have to be a teaching session to go through the derivation of it. Nevertheless, when the draft arrives, look for the section on tax premium, because we really are looking for comments on it.

MR. STEINER: Let me add to what Mary has said based on my understanding of what our committee has formulated as a methodology for determining an interest rate. First of all, I think most everyone on the committee believed that there was a range, for any given circumstance, of reasonable assumptions. As a matter of fact, the draft may still say that there is no specifically correct interest rate assumption. Rather there is a range of interest rate assumptions. Unfortunately, we were unable to determine that range, and now one of the open issues is whether actuaries really want the ASB to dictate the range, given a set of circumstances. How many of you

truly want a "mechanical box" that, when fed circumstances X,Y,Z, and Q, automatically produces an interest rate?

One of the things that we partly agreed upon is that there is a range of reasonable assumptions, but you won't successfully get any of us to tell what that range is. Essentially we recommended using the building-block approach to develop the range. This approach can be the first step, although you may include the tax premium that one board member recommends. Alternatively, you may just look at historical returns and factor in the asset mix. Whatever approach is used, you develop a building-block interest rate. Then you compare that building-block interest rate with current rates of return on long-term Treasury bonds. If there is a significant disparity between long-term Treasury rates and the building-block interest rate that you've developed, then you should use some type of a blending, depending on how well funded the plan is. The more well funded it is, the closer you should be to 30-year Treasury rates, provided that the 30-year Treasury rate is higher than the interest rate plus the returns on long-term government bonds that you have built into your building-block model.

The reason that we've added this additional constraint is to prevent the situation that occurred in the early 1980s. At that time, actuaries were using the building-block approach to develop interest rate assumptions of 6%, even though long-term yields on government bonds were over 10%. Many of our clients subsequently did things like buy annuities in order to reduce their contribution requirements. As a result, the Pension Committee felt that in an environment of high interest rates, this is something that should be included. While a building-block approach gives you a long-term interest rate, you should factor in current returns.

How you account for current returns is part of the actuarial art. After you do allow for them, you have a range, given a number of factors that the paper discusses, such as the funded status of the plan and the asset valuation method. If you're deviating from a method that does not anticipate market value, then you should also factor that into your investment return assumption. You should factor in the plan's historical experience over roughly the last five years. As I said, the funded status should be considered, but heed must be given to the purpose of the valuation, your sense of reinvestment risk, and the size of the plan. To a certain extent, the committee has said small plans with small assets may have more reinvestment risk or less investment flexibility. Thus, given the starting range and the factors that you have, pick an investment return within that range.

That's the basic methodology that the committee has formulated. It's been presented to the board and the board is making the appropriate changes. As we indicated, we'd like your input on the basic methodology. Currently the ranges are not "3-9%" or "5-9%." Rather, they are described in fuzzy terms.

MR. ARNOLD F. SHAPIRO: It's not always the case that small plans are simple plans. If there are two people and there's a noninsured death benefit, an interesting problem results. Moreover, if we're enthusiastic because we have this new technology, why don't we give credibility factors? Suppose someone thinks they can determine the number? How credible is their number in actuality? If they say they're really sure of what they are doing, then how close are they going to be? It seems to

me that until our technology is such that we can produce credibility factors -- statements about how good our numbers are -- maybe we should rethink what we're doing.

MR. STEINER: By "rethinking" what do you mean?

MR. SHAPIRO: Well, we may not be as good as we think we are.

MR. STEINER: Definitely.

MR. SHAPIRO: I had a paper on stochastic models for pension plans published in 1979. It didn't get many readers. I'm not sure our technology has gone quite that far, but that's just a comment.

MS. SHERRIE B. DESMOND: In your list of things to consider, I haven't heard you say anything about the investment philosophy or funding policy of the employer, or even our best guess at the investment skill of the employer. Personally I'm not very comfortable using the same investment return assumption for the client who has all his money in corporate debentures, versus the client who has very aggressive equity managers that keep them financially well off all the time.

MS. ADAMS: We did not mention that in this particular discussion, but I can assure you it is in the paper. We know that there are many constraints in different industries and by different employers. For example, I have one particular client who had everything in short-term Treasury bonds; the client was in bankruptcy and wasn't going to lose one penny in the stock market. There are many different philosophies. Also we took into account the instructions that may be given to a money manager. Again, it is mentioned in the paper, and it's a very good point and very influential. Similarly, one should consider the investment mix.

MR. STEINER: The investment philosophy and the investment mix are parts of the building-block approach. In developing the building-block interest rate, the paper suggests that you weigh the current investment mix by historical real rates of return, and add this to your inflation assumption. Clearly there is a philosophy with respect to the current investment mix.

MR. SMITH: If I understood you, I think you were asking this group whether you should either give a range or avoid giving a range. Is that really the question?

MR. STEINER: Absolutely. The Pension Committee is currently looking for input and will continue to look for input when it releases the exposure draft. What we have produced, and if the board accepts it, will not be gospel. Rather it will be a paper to entice response. Very definitely if you are of the opinion of desiring a safe interest rate range that the IRS would accept and the Academy would promulgate every year for all plans, and that would allow you to move the interest rate around while knowing it would still be accepted by the IRS, then by all means let the ASB know.

MR. SMITH: Well, I'll give a reaction. Using numbers, to me, seems extremely dangerous, since they differ substantially according to the plan's characteristics and problems. You see them fluctuate wildly from one day to the next. If I were you, I'd

be careful even in giving an example. If you're going to use numbers in an example, you'd better make it very clear that that example works only for that specific situation.

I don't see how you can ever give us a safe range that we can expect to work with all the time, given the various problems that we have. I think it's simply impossible. Therefore, I think you're forced to use words and nothing else but words. Nobody will like that, but I don't think there's any other solution.

MR. STEINER: Well, I think that's what we have to date. There are no specific ranges and exactly how valuable this standard will be once it is finished remains to be seen. It would be nice if the IRS accepted the standard that we developed. On the other hand, there are a lot of people who believe that we shouldn't tell actuaries what interest rate to use at all. It's a very narrow line that we're walking: trying to give some value to the membership while not binding anybody at the same time.

MR. PETER L. DURBIN: I would like to add some comments. At the risk of making your task more difficult, I would suggest that this whole question of making assumptions may have application in the legal and life insurance area when you're doing projections.

The times that I am required to justify my actuarial economic assumptions is in the function of expert witness. While I agree with the building-block approach, I must be prepared to defend its use and take an overall view. There's nothing like being cross-examined by a hostile attorney or by an inquisitive judge to hone your ability to defend your actuarial assumptions.

On the question of variability, in the past year I have used real discount rates of as little as 1% or 1.5% on loss of wages, and as much as 12% in valuing the loss of an export crop. So it is very much a matter of "horses for courses." You mentioned emphasis on long-term future expectations. I think that you must pay regard to the term of the liabilities, and you can't say that's necessarily a long term. As for economic assumptions, I would suggest that you might add a tax, and I fully understand the tax premium issue. In New Zealand, we are in the situation of paying tax on the investment income in pension funds, so we have to take that into account.

As I say, I think it's a matter of using the appropriate methods. You use the building-block approach to get to a result. You then come to the "art," which is where the conflict arises. You have a prospective and a retrospective approach, and you must look at both the overall assumptions and the overall fit to see if they are reasonable. Would a reasonable man agree with you? Would a judge agree with you if you're in court? This is important because that's where you may end up.

MR. STEINER: You made a very good point. I think one of the purposes of standards is to allow actuaries following the standard to refer to the same standard in defending their assumptions. Let me just repeat in my favorite terminology what this standard says. The good actuary uses the building-block approach to develop his or her investment return assumption, and then checks that building-block assumption for reasonableness against the current interest rates available. He or she then makes adjustments for a variety of factors in determining the interest rate to be used.

I think the next step, although it's not in the proposal, is to require the good actuary in his or her actuarial report to disclose the process that he or she undertook in developing that interest rate assumption. This is significantly different from current practice, which involves putting down 5% or 6% in your report and disclosing it in one of those tables at the end at which no one ever looks.

MR. JACOB: I think that there is a dichotomy in this struggle. The actuary representing a client tries his or her best to produce assumptions that this client's plan experience will reproduce. The IRS is trying to get a general standard, and perhaps we should be willing to recognize that effectively a deviation from the general standard in a particular pension plan is a gain or a loss, depending upon the experience. The IRS is trying to define what is "general," and I think the ASB should try to guide actuaries by defining what is "specific," since their responsibility is to their clients. We all have responsibility to society, but our primary responsibility is to our clients, and their experience, investment portfolio, and investment objectives are all paramount in the result that we should use.

MR. FREDERICK W. KILBOURNE: I'm intrigued by the concept of the good actuary. I like it very much, but I'd like to introduce the concept of the excellent actuary. This grows out of my thinking on the "deviating" actuary, and the idea that such actuary should be innocent until proven guilty. In my opinion, it might be better to go even farther and say that we would encourage deviation provided it can be supported. The presumption would be that the deviating actuary is the excellent actuary, and we are excitedly looking forward to hearing why this person has come up with something that is better than what the mere good actuary follows. Of course, that person then suffers the burden of proving that the deviation is not only as good but also desirably improved.

For example on this, consider the 8% versus 5% question that was talked about earlier. The IRS perhaps would say that 8% is as low as it will permit or it is the appropriate rate. Listening to Jack Bragg's statistics, the IRS is telling us something: namely, the long-term inflation rate is going to be higher than historical averages. Maybe it is enlightening us to some administration policy to collude with Congress on this. In any case, the excellent actuary could say that eventually -- as indicated by select and ultimate selection of interest rates -- the voters are going to replace Congress and we're going to have lower interest rates. In fact, the actuary could choose 5% for an ultimate rate.

I would consider that to be an expression of opinion by an excellent actuary provided there was support for that. I don't know how to come up with that support. Perhaps history would show that when the leaders are acting contrary to the interest of the people, they eventually get ousted. Perhaps that burden could be assumed. I don't think I could assume it.

MR. STEINER: I'm not sure that by using a select interest rate you would be an excellent actuary. I think you would be a good actuary because the standard provides that if current rates are significantly higher than your building-block, best estimate assumption, then the actuary is encouraged to use select-and-ultimate rates or a blended rate. It's not to say that you're not an excellent actuary, though.

MR. DAVID M. WELSH: I would like to inject a cautionary note when people start talking about 100-year histories of inflation and real interest rates. Probably 100 years ago people were buying buggy whips and not very many camcorders or CD players. That is, there are huge qualitative differences. This is a very difficult field to measure accurately over long periods of time, so I hope that if we're using these kinds of statistics, then we use them advisedly and bring a little bit of common sense into their application.

MS. ADAMS: Just a quick comment on that. There are studies, such as the ebitson studies, that show real rates of return and inflation over periods of time. I would like to refer to the experience of one of my clients. Last year for the first time since 1947, it had an average real rate of return -- that's net of inflation -- of close to 3.1%. These rates are low and you can find various statistics that support them. I think the ebitson studies covered the last 50 years, while Jack Bragg covered 100 years. One hundred years was better than 50 years.

MR. WELSH: Yes, but 100 years ago this was primarily an agrarian economy in North America. It's gone from an agrarian to a manufacturing to a service economy. Take a component like sugar or wheat; the amount that people use now is different from what people used 100 years ago. This is very difficult to pinpoint. People can show the statistics, apply fancy formulae to them, but they won't pass the simplest test if you consider how much economies have changed, or how we have global money in capital markets that were comparatively nonexistent even 50 years ago. Again, let's apply some common sense in this matter.

MR. STEINER: We basically agree. The standard that we've developed says that the good actuary should consider actual experience, but should emphasize long-term future trends. Therefore, there were certain members on the committee who were not comfortable with just the building-block approach, where the historical experience over 20 or 40 years is used as the sole criterion for developing the assumption. We added that you have to look at the current rates of return and account for them in the equation. Specifically, the more assets that you have, the more you should account for them in current returns, because you can certainly get these current returns on your assets. That is, I don't think that the committee is emphasizing the historical returns.

MR. SHAPIRO: To what extent is it important that you're not the asset manager? If I have a client who is not investing in 30-year Treasury bonds, what's the impelling reason why I should take current returns into account? I don't understand why just because I'm allowed to use these rates, that I should disregard the experience of the client who thinks he can do better than Treasury rates, when I know that he can only do 6%. That is, I don't think he can do as well as he thinks he can. What do I do about that?

MS. ADAMS: Well, we said that part of the process was to look at the company's experience, the instruction it has given to its money managers, and its investment mix. Again, that's the art.

MR. STEINER: You include that with the past experience adjustment. Within the range of reasonable assumptions that you develop, you account for your client not doing particularly well in his or her funding.

MS. ADAMS: We do talk about multiple investment returns and blended rate assumptions. The multiple investment returns can be on the select-and-ultimate basis; that is, they may vary by duration. We also looked at using a different assumption for liabilities that are covered by present assets, versus liabilities that may be covered by future contributions. That evolved into the development of a blended rate -- two rates combined into a single rate.

We mentioned this fairly briefly, but I can tell you that one of the committee members inundated us with computer print-outs that showed the marvel of using these blended rates. They really did -- over a period of time -- follow two different justifiable rates.

Our next step was to develop an inflation assumption. Now, inflation is the one thing that is common to both the liability side and the asset side. We have referred to the use of published indexes, and we caution people to remember the volatility of the inflation assumption. Jack Bragg mentioned before that it is extremely volatile, and you have to be very careful in both determining and projecting it.

MR. STEINER: We have almost reached a consensus on pay increases. The basic premise is that we think that there should be consistency in the inflation rate developed in the building-block approach with both the investment return assumption and the pay increase assumption. Thus we've basically decided on the standard building-block approach for picking a salary scale assumption consistent with inflation, similar to the one developed for your investment return assumption. I think the tax premium issue becomes an issue here, since the tax premium affects the salary scale. The theory is that the higher the tax premium, the lower inflation will be. Hence, the tax premium allows you to have a larger spread between the interest rate and the salary scale.

MS. ADAMS: Within the salary increase assumption, we did include the merit increases. We referred to both a salary scale graduated by age, which is a select and ultimate salary scale graduated by years of service, and the productivity increase, which Mr. Meyers referred to earlier. We have referred to plan size, the actuarial cost method, and the plan benefit design. The last item is the purpose of the valuation. Now, if you were doing a valuation for purposes of financial accounting, you have to keep in mind that these numbers are for management. They are not necessarily for the actuary.

I feel very strongly that you should get management to use assumptions that you think are reasonable. I haven't personally encountered a bad situation, but I have heard of situations where management would prefer to use an assumption that's outside what we would define as our range. In my opinion, you have no trouble doing that as long as you express the fact that you are using it because management wanted this number. You have to take things like that into account. Truthfully, I would prefer that they do what I tell them. Nonetheless, state what you did and why you did it. That's part of the disclosure. In the disclosure element, there is a standard disclosure terminology that's at the end of all ASB promulgations and that is

also in ours, and it says to state what you did. You may want to, in certain circumstances, outline all of your reasons. I think many of our members prefer that you expose everything you did, although it's not really required. For sure, if you do something that's different from the standard, then disclose it.

MR. STEINER: I'd like to say, with respect to this issue, that I think the current draft says that the actuarial cost method should have no impact on the investment return assumption. Similarly, the plan benefit design should not have an impact, which refers to a question raised earlier of whether we should use 8% for career average or flat dollar plans.

I do want you to think about this. It's an important area. When and if the exposure draft is sent, please voice your opinions. Mr. Smith said we shouldn't have any numbers, and my response to that is there must be a number that's too low and unreasonable. Does everybody agree that 3% is too low? Is 2% too low? Is 4% too low today? Is there any consensus? If we can't reach a consensus at all on a lower or upper bound, then I think the public has the right to pick a range for us.