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FE: Impact on Small to Mid-Sized Pension Plans

Track: Smaller Consulting Firm, Pension

Moderator: DANIEL P. CASSIDY

Panelists: DANIEL P. CASSIDY
MARCUS A. ROBERTSON

Summary: Current debate about FE has focused on the impact on large plans. This session provides an opportunity to discuss the application of FE on smaller pension plans, in particular, those of private and nonprofit organizations. Panelists address agency cost, closely held corporation issues, impact of bundled service arrangements and investment constraints. At the conclusion, attendees understand how to best integrate FE into their consulting practice.

MR. DANIEL P. CASSIDY: Our goal for today's session is simple: to allow practicing actuaries to interact on the impact of FE on our clients. Today's agenda is an open forum. We'd like to have a nice discussion on all the different issues with substantial audience participation. This session was developed based on a reaction to the great controversy session in Vancouver last year, where Jeremy Gold put together a great session with a lot of speakers, but the discussion time was minimal. Marcus is going to warm us up on the topic, but then we are going to have a very open discussion. We have prepared some questions in case you don't participate fully.

MR. MARCUS A. ROBERTSON: The first question is, what are we doing here? What's the big fuss in FE? Essentially, the recent experience in plans has caused an awful lot of concern. We've had poor markets. We've had some high-profile bankruptcies, and clearly we have a lot of accounting problems. Traditional pension plans and traditional funding and accounting approaches have been under fire for the last couple of years. The defined benefit (DB) "failures" are always big news,

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and the news seems to be focused on the airline and steel industries, certainly in Canada, and in the United States as well. A couple of examples are United Airlines, in the United States, and Stelco, the biggest steel company in Canada, which have very serious problems these days.

We're hearing in the United States that there are increased Pension Benefit Guaranty Corporation (PBGC) claims. In the year 2004, based on information provided from the PBGC, there were nine plan takeovers to date with \$1.4 billion in liabilities and \$0.6 billion in assets, which is about a 43 percent funding level. Secondly, the response from the PBGC with the investment policy is that they are actually cutting the equity investments in the funds that they're directing. They are cutting the allocation in half to a target of 15 percent to 25 percent. There's also recent law that you're well aware of in the United States that will allow companies to delay funding, which raises a question as to whether or not this is a rational response to the problem at hand.

We have a different system in Canada. We have about 10 regulators instead of one. We have a federal government and a tax system that look at the amount of money companies are putting away, and they're trying to minimize that amount. Then we have provincial regulators and a federal regulator that are concerned with benefit adequacy, so they're wondering whether or not companies are going to be able to actually provide the pensions.

In Canada, as part of a regular valuation, we have to do what's called a solvency, or wind-up, valuation that is a snapshot. It partially addresses some of the issues that we're faced with. It adds a certain amount of conservatism; it requires a certain level of funding. We do not have a PBGC, but in one province, Ontario, we have a Pension Benefits Guarantee Fund that partially addresses shortfalls on wind-up, but at no other time. That's a little different from the United States, where you can go into bankruptcy protection and kind of shovel off these liabilities if PBGC takes them over. In Ontario, you actually have to go out of business. We certainly don't, in Ontario, cover pensions of up to \$40,000. In fact, the limit is \$1,000 a month, so it's quite low protection.

In Canada, we can still do triennial valuations. They're still popular, but that by itself presents a situation where you can have rapid deterioration in the funded status of a plan. That's possible, and certainly after the last three years it has been evident. We have many plans that are in serious trouble, and there have been many calls for action, but there has been no official response yet. That was the case when we prepared this talk, but earlier this week the federal regulator that's looking after Air Canada gave them some relief on their contribution requirements. That, again, is kind of an odd response in some ways, but they're trying to keep the business alive.

I'm going to talk about the traditional approach, which is not what we're really here to talk about. Traditionally, we looked at pension plans as long-term arrangements.

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We didn't think too much of short-term fluctuations; they weren't seen to be big problems. Recently, the experience has caused a significant amount of concern in Canada, partly because of the solvency valuations that are creating big contributions requirements for the companies, but generally the short-term fluctuations weren't seen to be problems. Certainly in the last couple of years, we've had a lot of news from the accounting profession because losses were being recognized over the future. There certainly wasn't much concern expressed when there were gains year after year.

We thought we'd talk today about what "FE" means because it seems that it means different things to different people. The profession needs to get together and answer this question, but today we're going to focus on pension plans and what we think it means. Hopefully we'll get into some discussion about that later.

FE, from our perspective and from what we've been reading from the Vancouver sessions last year and since, is that the pension plan is seen as part of the company. Its assets and liabilities are considered to be assets and liabilities of the company. FE from a pension perspective focuses on two ends—the shareholders on one side and the members on the other side. The shareholders are worried about their shareholder value; the members are worried about the security of their benefits.

The arguments for FE will cover three items: investment and risk, accounting and agency cost. They will not be covered in a lot of depth, but we'll get some of the points out. With investment and risk, from the key position of the shareholder, the value of the company as a whole should be independent of how it is financed, whether there's debt or equity. Looking at equity, it's clearly more expensive than debt. With the shareholders, the shareholder value is going to be determined by the level of profit in the company. The shareholder's goal will be to increase profits without increasing the cost of capital. Of course, all of these things ignore taxes altogether. From the plan member's side, plan members are seen to be risk-averse. Their focus is on the security of the pension. At the last session, one speaker said that members are asking if there will be enough money to pay their pension. They want to know how much is in there.

The conclusion you would come to with respect to the pension plan is that the shareholders and the plan members would both prefer that the pension fund be invested in debt and not equities. Assuming that the assets and liabilities are matched, the shareholders have minimized their investment risk and the members' benefits would be more secure.

The current approach to accounting raises a lot of questions. First of all, the inclusion of liabilities that are related to future salary increases overstates the true current liability of the plan by itself. Our accounting standard in Canada doesn't have the concept of an accrued benefit obligation; right now we just have the projected benefit obligation. I think that over time we'll move to whatever standard

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is going to be used worldwide, but currently we don't have that concept. Secondly, there's the reflection of an expected rate of return on risky investments in the profit and loss. That's a factor in the current system. The question is, does it make sense at all? Does a dollar of equity equal a dollar of fixed income in value?

The last point is the amortization of gains and losses over future years. Again, this wasn't an issue several years ago when we were amortizing gains over time, but certainly when there are losses, it has raised an awful lot of eyebrows.

The third item is agency costs. FE argues for a simpler approach to managing pension plans, where the focus is on the shareholder value and plan member security. In the traditional approach, you have a mix of goals for the stakeholders. The stakeholders include the shareholders, the plan members and management. Having a traditional approach does create additional agency costs because you have to consider what management is trying to do. They may have a different focus from that of the shareholders or the plan members. Also, with equity investments you have costs of managing those investments as an additional agency cost. Those are just a couple of examples. With management it's coming down to consulting and legal costs as well, in trying to meet their objectives.

How does this affect us as actuaries working with small and mid-sized plans? We come up with the age-old question: Does size matter? With the traditional approach, generally for small and mid-sized plans we think we probably would have been a little more conservative with our assumptions, and perhaps with larger plans as well. Looking at the nine takeovers by the PBGC in 2004, eight of them had assets of under \$100 million, so that certainly suggests that the conservative approach wasn't working the way people thought it was. Under a FE approach to pension plans, there would be no difference between a small or mid-sized plan and a large plan.

FROM THE FLOOR: Why would anybody think that there should be a difference? I agree with you, but why would anybody even have the mindset to challenge that point?

MR. CASSIDY: Traditional practice has said that if there's a smaller pool, there's less experience available and it's not capable of surviving a dip in an asset pool as well as a larger plan, which has a larger volume of liability and assets. That would indicate that you should be more conservative in your assumptions.

MR. ROBERTSON: Under FE, it doesn't make a difference. Under a traditional approach, certainly there were arguments made for it.

MR. CASSIDY: In terms of agency cost, too, as you get smaller maybe there are no shareholders, or the shareholder pool starts to also get much reduced. Then the discussion of FE implications gets more interesting in the sense that the shareholders are two or three people in a small, closely held corporation. As the

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size gets lower and lower, should we be talking about those shareholders and what investments they have in the company, in the pension plan or other investments?

MR. ROBERTSON: As the last point in discussing whether size matters, we'll leave an open question. Would FE methods have reduced the number of PBGC takeovers?

MR. CASSIDY: Most of those takeovers, as you would expect, were more hourly based, flat-dollar plans. As far as the funding methods in the United States, typically the hourly plans are always behind the 8-ball in being able to fund to sufficient levels. This brings up a question. We have these facts. There are nine plans in 2004, and that's a huge number of plans for the PBGC to take over. How did we, as practicing actuaries, let that happen? There are nine actuaries for those plans, and they were interacting with that company each year doing valuations. Is there something that we could have done differently to help the plan sponsor avoid this situation, thinking about FE and the implications of what they're saying?

MR. ROBERTSON: The next topic we were thinking about was how the application of FE would differ by the plan sponsor type. Clearly the approach is based on public companies, where you're trying to balance shareholder and plan member needs, but you don't always have shareholders. Dan just spoke about privately held companies where you have one or a few shareholders, where the shareholders could actually make decisions about risk and return as opposed to a large, publicly held company where the shareholders really aren't acting as a body. We have a situation in Canada right now where some of the very large public plans—municipal employees' plans, the teachers' plans—are getting so big that they're actually able to make noise. They're getting board seats and such things, and they can actually talk about risk and return with the management of the company. But in a lot of cases, that's just not the case.

The second type of organization we thought about was not-for-profit organizations. Who takes the role of the shareholder there? Is it the board? We thought about associations. The Society of Actuaries is an example. Are the shareholders the dues-paying members? How are they going to react to the way the pension fund of the DB plan is invested? What assumptions are being made for the funding?

Multi-employer plans are an issue in that they present some interesting features. One is the joint board of trustees. Is that the shareholder for a multi-employer plan?

FROM THE FLOOR: The contributing employers?

MR. ROBERTSON: Yes, though contributing employers, in a lot of cases, have negotiated the contributions, so the issues are different than if they have an open-ended promise. Typically what we see, in Canada at least, is that the promise is fixed at the contribution and that won't be changed unless there's another contract.

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FROM THE FLOOR: In the United States, if the contribution is inadequate and benefits are not cut adequately, the IRS forces the employers to contribute more, notwithstanding the contracts.

MR. ROBERTSON: That's completely different from Canada.

FROM THE FLOOR: If the employers do not contribute more, they pay an excise tax and then have to contribute more. The excise tax is 100 percent of the required contribution, and then you still have to make the contribution.

MR. ROBERTSON: In Canada there's only one province that has specific rules about multi-employer plans. That's Ontario. Multi-employer plans are not covered by the Guarantee Fund in Ontario. The obligation with respect to funding is on the actuary. If the actuary believes that the future contributions in the fund will not provide the benefits, then he or she has to present a plan to the board of trustees to either increase the contributions, which is not going to happen until there's a contract, or decrease the benefits, which is the normal course of action. There are certain time limits, but that's it.

I would say, and perhaps Dan can comment on the U.S. situation, that in Canada with multi-employer plans the approach has been generally more conservative, but certainly not to the extent that we would find with a FE approach.

MR. RICHARD KUTIKOFF: In Canada, without the equivalent of the PBGC, except in Ontario, what happens when plans terminate underfunded? Do employees and retirees get less than they were promised? If so, what has been the public reaction to that?

MR. ROBERTSON: If the plan is terminated voluntarily, then the company is obligated to pay out the benefits that had accumulated to date. If the plan is terminated because the company is bankrupt, then the members lose. There is a real backlash when it does happen; it doesn't happen very often. Unfortunately, when it does, it's Stelco, Air Canada and companies like that. Stelco is in Ontario, so a lot of the members will be covered, but not adequately, by the Pension Benefits Guarantee Fund. But history has shown that the actuaries and the companies have done a fairly good job. It is just in recent years there have been a couple of high-profile cases that would suggest otherwise.

MR. STAN TANNENBAUM: In one of your opening remarks, you commented that under FE the shareholders and the members would both have a preference for investments in fixed income securities and incorporating the financials of the pension plan in the corporate financials. Now if you have an obligation for the participants' benefits, is the shareholder preferring that you take money out of the corporation and buy fixed income securities, or might the shareholder prefer that you put no money aside, on the full faith and credit of the corporation, and invest it in the corporation? Are they really saying that the way to run this corporation is

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that we can do better taking money and buying fixed income securities, rather than investing in the corporation? If that is the case, maybe this corporation would do better, rather than running a business, to take all its money, invest in fixed income obligations and really benefit the shareholders.

MR. ROBERTSON: My opinion is that, given their druthers, they wouldn't put a cent in the pension plan, but we're talking about a situation where there are funding requirements.

MR. CASSIDY: I would agree. That is a common question that we have with clients about what funding level they should have. You can put the money in here or you can use it for your business over there. In our classic discussion with clients, we say, "That's a corporate financing decision." We give them some ramifications of funding now versus funding later, but FE might impact us and maybe change our response to that question. We might say instead that it's not a corporate finance decision but really a shareholder decision.

FROM THE FLOOR: Hasn't it been demonstrated through the literature that, assuming the company could borrow at a reasonable interest rate (by reasonable interest rate, I mean an after-tax rate that's less than the pre-tax rate on high-quality bonds), put the money into the pension plan, earn the interest tax-free, while it's deducting it on the outside, and create value, at the same time providing enhanced security to the participants. If, on the other hand, the company is of such junk quality that it can't borrow such that its after-tax rate will beat the pre-tax high-quality bond, then do the participants really value that pension plan and expect to get anything from it if it's so underfunded? Or are they discounting it, and you're not getting the value of compensation to your employees because they're assuming that it's a phantom benefit? Alternatively, are you hoodwinking your employees? You're not creating value by leaving the money in the business and not funding the plan. If you need money in the business, borrow. If you can't, maybe you shouldn't be promising these benefits.

MR. CASSIDY: That brings up a good point that I always struggle with when we talk about this issue. Namely, that of the labor having the ability to make an educated choice between Employer A and Employer B, where a plan is well-funded in one and not so well-funded in the other, and having the compensation packages be something that they could discuss and talk about. Maybe academically you can do that, but in real life, I don't see employees having that discussion or that ability to impact their compensation.

FROM THE FLOOR: Then why offer the plan? If the plan is of such ethereal value, what benefit do you gain from offering the plan?

MR. CASSIDY: What FE would say is that the employee would be able to make a determination on the guarantee in that DB plan based on the current funded status. Forget about the benefits, but also times the probability of me getting paid, and I

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don't think employees do that second step. They might say, "All right, this benefit is worth \$10,000 and that benefit is worth \$6,000, so I need to have some direct compensation difference."

FROM THE FLOOR: Are you saying that the real value of doing it is that you can give the employee something that the employee values that does not have value because the employee is being hoodwinked?

MR. CASSIDY: I think for employers that don't fund their plans well, they basically are. Yes.

FROM THE FLOOR: I think the FE would say that the only rationale for not funding a plan is that employees are ignorant. When you underfund a plan, you're borrowing from your employees instead of from the bank. Your employees are already exposed to the specific non-diversifiable risks of the success of your company. Therefore, if they were rational, they would lend you money more expensively than the bank, which can diversify its loan portfolio. What's the implication of this? If you were negotiating with rational employees, you would, in fact, agree to fully fund the plan, even if you had to borrow from the bank, because the bank would be a better lender. It has another set of implications at the societal level. If that's the logical contract with a no-guarantee corporation, and I'm assuming nothing more than that the shareholders are not cheating the employees, then society should, perhaps, demand the same protection because it's probably not in society's collective interest that shareholders take advantage of employees. If you make the decision as a society that shareholders are not to take advantage of employees, then, in fact, you legislate full funding because it is the efficient solution.

MR. ROBERTSON: On the question of the contributions the company is making and what Dan has been talking to his clients about, we're not talking about trying to fool anybody.

FROM THE FLOOR: This is about Stan's comment to not fund it and keep it in the business.

MR. ROBERTSON: Right, but the point I'm trying to make is that we're talking about short term. Stuff happens. You run into a situation; you want to improve a plan; you have some bad experience—whatever the deal is, you have some short-term funding issues. In Dan's discussion with his clients, he's probably talking about a minimum and a maximum contribution to get you to that fully funded level over a short period of time. We're forced to do it in Canada over a period of five years in most of the provinces, so the company has got some decisions to make. They may not be in a position where they can go and borrow the money to put it in. They'll make a decision and then it's funded over five years, so you're staying close to that full funding target. But it's not counseling, and companies are not making decisions, to hoodwink anybody, at least in our experience.

FROM THE FLOOR: If employees would appreciate fully funded plans and therefore legislation should require it, would employees, do you think, appreciate better plans that are better than fully funded, say 125 percent or 150 percent funded, because there is volatility risk? If so, should there be legislation that allows it or mandates it?

MR. CASSIDY: I've never had an employee talk to me about the extra value of overfundedness. I've had CFOs ask me what words can they use on their next analyst's call to describe how overfunded they are. I think there is an appetite from a public company for the CFO to understand or to appreciate that overfundedness—beyond these issues that we are talking about—so when the analysts ask how well funded the plan is, the CFO can say "very" or "extra good" or "super well-funded." I've had conversations with CFOs about what language they should use, so I think CFOs appreciate that overfundedness. I don't know if participants do.

FROM THE FLOOR: The question assumed that they do.

MR. CASSIDY: In talking to Jeremy Gold earlier this week, I feel like we're almost going backward to maybe how FE would talk about a pension plan of the future, or what we should be "promoting" is buying non-participating deferred annuities for each year of service cost. Is that the optimal funding strategy that we should be recommending to plans to get out of the game of trying to beat the market with any equity exposure? Do you have a service cost? Go buy some non-participating annuities to cover that and be done with it. Is that where we are?

FROM THE FLOOR: The whole crux of this relies on rational stakeholders, including completely 100 percent rational employees. I wonder if that assumption is heroic.

MR. CASSIDY: There are some other issues I'd like to talk about to spur some conversation. We also do stochastic forecasting for clients where we take their asset allocation and project that out over time. We show them Portfolio A, this is the result of that, and then we show them Portfolio B, where we are changing more equity, less equity, etc. It's all based on different models underlying the economics, either a mean-variance at traditional model or some other term structure model, like a multi-factor model. That's the current state of actuarial practice when a client asks you to evaluate Portfolio A versus Portfolio B. You show the client a nice floating bar graph of the pension expense and the minimum or maximum, and you try to make a decision to optimize some variable. You talk to them about what variable is important to them. Is it the funded status, pension expense or contributions? Does FE say that those types of exercises are exercises in futility? Does FE say that clients should not even spend the money for us to do that? I wanted to talk with practicing actuaries to see what you are thinking about. Should we even engage in those types of activities?

MR. JEREMY GOLD: Jon Exley, of Mercer in the United Kingdom, crystallized this issue for me. FE is not just the asset model of Markowitz and Sharp. It's also the

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corporate finance models of Modigliani-Miller, Black and so on. All of the education of actuaries and all of the absorption by the actuarial community of FE prior to the year 2000 came from the Markowitz-Sharp line. It's a great line of analysis, but applies most appropriately to individual portfolio selection. It's called the portfolio selection line. It applies most particularly to the behavior of rational individuals. We've applied that technology as though the corporate sponsor or the corporate plan or the trustee plan were itself an entity capable of making a portfolio selection judgment. The other line, the Modigliani-Miller line, says essentially that it's irrelevant. Marcus captured that very early in the presentation. What Jon actually says is that we've been using the wrong model forever. When you use the Modigliani-Miller model, you get very simple, closed-form solutions, and, therefore, in that context, the stochastic modeling is an exercise in futility if the sponsor were perfectly well-informed, and if the legislation and accounting were crystal transparent. But for the moment, at least, it's a way to earn a living, so keep at it.

FROM THE FLOOR: Marcus, you mentioned that in the Canadian requirements, you're still allowed to do triennial valuations. Is there any requirement that there not be any significant changes when you're doing interim valuations?

MR. ROBERTSON: There's a federal requirement—this is what got Air Canada in trouble—that says that the regulator can ask for another valuation if he thinks that the funded status has deteriorated. That actually happened, and I think that Air Canada refused. That got them in trouble. The only other requirement, again, is in Ontario. In Ontario, if you're under 80 percent funded on a wind-up basis, you have to do annual valuations until you get above 80 percent. But really, it can go for three years and the funding status can deteriorate quite rapidly.

FROM THE FLOOR: I'm thinking of a comment Jeremy made at one of the sessions asking whether we are based on science or not. My feeling is that our work is based on science. We're in an environment where part of it is based on perceptions and understandings of what we do. That's where it is not based on science because we deal with complicated issues. We frequently get confused ourselves on what it is that we're talking about. We started having an argument about expected rates of return and turned it into discount rates. We do those kinds of things all the time. If we did something and we were able to present it to a rational person and explain why we did it, then there would not be this kind of controversy. It does not work like that.

We talked a little yesterday about the controversy a couple of years ago with Warren Buffett in talking about expected rates of return. My concern is, did he really know what the issue was when he talked about it? If we're, as Jeremy said, based on size, we could explain how we came up with the 9 percent. We looked at 15-year returns and based on their spread, that's what it is. If Warren Buffett wants to say that we should do something differently because in his opinion the financial markets have changed forever and we'll never see high rates of return again (obviously now he's wrong), that's a different argument than the charge that

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actuaries are doing things they know are incorrect and they're purposely misleading the regulators and the auditors in order to profit these companies. That's what we were charged with. I never heard a real strong response saying that's not what happened and that wasn't what we were doing. We can try to be as careful as we can in basing all the information that we provide on good actuarial science, and then we can get down to a discussion about whether 7 percent is a better number than 9 percent or whether it's reasonable or unreasonable. But if we go through all this rigor and then the end result is left up to the understanding of people who really don't understand the issues, then I'm not sure how that problem gets solved.

MR. LOUIS ADAM: I'm a professor at Laval University. I want to make a comment about the situation in Quebec. The province of Quebec also has something equivalent to Ontario on the federal level. You will be required to have more than a triennial valuation if the supervising authority thinks that your plan is going badly on a solvency level. That's my understanding, or at least that's what I try to teach to my students. If the government thinks that your plan is in danger, it will intervene and require an annual valuation, or an on-the-spot valuation if that's required. That's a kind of protection that I think exists in Quebec. I would have thought that true in Ontario also.

MR. ROBERTSON: I think that in all the provinces in the regulation there are those provisions that the superintendent can take over a plan or order reports to be done, but you hear most about Ontario.

MR. ADAM: It's also because of a case we currently have in Quebec where Jeffrey Mine has been going under and pensioners will have some of their pensions cut, so it created a big political issue at that time. Maybe I'm too Canadian to understand how you fund in the United States, but at least in Canada we have the double standard. We have to fund on an ongoing basis and also on a solvency basis. If things go really bad, you have to accelerate funding in the next five years.

MR. CASSIDY: There are similar rules. There is some ability to mitigate that solvency part in our system. It's a smooth value. That whole discussion that you might have read about, setting our new 30-year Treasury rate, was really focused on solvency.

MR. ADAM: I'm trying to reconcile the idea with the fact that yesterday I saw figures of funded status around 40 percent. Was there someone sleeping on the switch? What happened?

MR. CASSIDY: That value that the PBGC puts on the liability is not the same value that we would do on an ongoing plan valuation.

MR. ROBERTSON: In two provinces in Canada we have something called "grow-in" benefits when you do a solvency valuation. Right now when we do the solvency, if a person has 55 points (that's just age and service), we have to assume that the

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accumulated benefit would be paid at the date it was most valuable, under the assumption that the person kept working and the company kept in place. If you had a 30-and-out rule, for example, and I'm 40 with 15 years of service, then you assume that I'd start my pension at 55 on an unreduced basis.

MR. CASSIDY: We don't have that in the United States at all.

MR. ROBERTSON: We only have it in two provinces. One of the provinces, Nova Scotia, was under a lot of pressure to get rid of that because it's creating high levels of contributions. The superintendent of pensions in Nova Scotia went to the minister involved and said that it would be a good idea to have some discussions about this in the industry. The minister went away and put in the budget that they were getting rid of grow-in benefits altogether. The minister didn't understand the position. I don't know if that budget passed yet, but it may be passed and we might get rid of that protection in one province. That forced additional funding, without the guarantees. There's no guaranteed funding, but that certainly pushed us toward it.

MR. ETHAN KRA: There have been many who have questioned whether actuaries are individuals who drive by looking through the windshield or looking in the rear-view mirror. Have you ever tried to manipulate your car by keeping your eyes only on the rear-view mirror as you go forward? Examples would be bonds over the 20-year period ending in 2001 or 2002. What did they return? There were phenomenal returns on long-term fixed income securities. That was as interest rates on long-term Treasuries went from 16 percent down to 4.5 percent. To get the same type of total return over the next 20 years, are we going to see interest rates go from 4.5 percent down to what would have to be 1 percent, 0 percent or negative? I haven't done the mathematics. I'm sure we could pull out a calculator and figure it out.

Equities did phenomenally over 17.5 years from that famous day when Henry Kaufman in August 1982 said, "The market's going up." It took off that day and didn't look back until March 2000. The Dow Jones Industrial Average went from somewhere in the 700s to something in the 11,000s. What drove that? Total return on equities comes from dividend coupon, growth in earnings—effectively, the growth factor is how you are going to get more dividends in the future—and change in P/E ratio. You have inflation. We went from a dividend coupon of about 5 percent down to a dividend coupon of about 1.5 percent. With share repurchase, I'll give you 2 percent. We've dropped 3.5 percent there on the return. We don't have expectations of inflation plus real growth of more than about 6 percent. Who expects P/E ratios that went from about 7 in 1982 to somewhere in the mid-20s, at least, if not higher, by 2000, to go to 60, 80, or 100?

To get the same types of returns over the next 20 years, we're going to need some humungous P/E ratios. If you assume P/E ratios remain constant, with no degradation between your dividend coupon, inflation and real growth, you'd be lucky to see somewhere around 8 percent on your equities. Couple that with your

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4.5 percent on your long-term bonds, because any corporates are going to pay more since you'll have a default risk. So you're going to get 4.5 or 5 percent if you took a long-term bond. If you took a Lehman Brothers Aggregate Index, again it's going to be somewhere in that range, which has a lot of shorter-term bonds. Put in whatever asset mix, forgetting FE. Just looking at it through the windshield instead of the rear-view mirror, what do you come up with as your 50th percentile, best guess for investment return? I think that's where Warren Buffett was. I don't think he was on FE. I think he was saying, "Actuaries, drive through looking at the windshield, not your rear-view mirrors, and try to figure out where you're going."

FROM THE FLOOR: You obviously have a better windshield than I do. I don't present myself as an expert in FE, so I do tend to look at the past. I don't know what's going to happen. Individuals may have some thoughts, as you do, as to what is going to happen differently in the future than in the past. To the extent that we can communicate those, make sure that we're all on the same page, and say that such-and-such is what we all think is going to happen, that's fine. My concern is that two years ago the message I heard was, "Nine percent is a ridiculous rate of return. You'd have to be an idiot to assume that." In fact, our clients earned 20 percent last year. That was for one year. We're not talking about for one year.

I'm not standing up here saying that I know what's going to happen. I don't know what's going to happen in 2004 five months into it in the market; neither do you. We can both have opinions and guesses as to what's going to happen. The numbers that we're working on are things that we're projecting out for years and years to come. Ultimately whatever it is that we assume is going to happen is going to be incorrect. There are going to be gains and losses along the way. The concern I had was that if we're being charged specifically as being overly aggressive or overly liberal in our assumptions solely to reduce the costs to the employers in order to drive up their stock and somehow that benefits me (I haven't figured that one out yet), then I think that's a wrong charge.

As I said, we can disagree about what the rational, best estimate is to use going forward. We can disagree about what's reasonable and unreasonable, how big the spread is and all those kinds of things. We can have those kinds of discussions, but they should be based on a rationale you have for how you do it. What I described is the traditional way that we've done it in the past. Maybe it's time to change it. Maybe we should make some adjustments to it, but that's the science behind it. It's not arbitrary. Maybe it's not called science. That's the methodology that was used. Maybe it's not appropriate. Maybe we should talk about how we should change it to make it more appropriate. But the idea is that we didn't just make it up. We didn't just say to use 9 percent because that's going to make your bottom line look better than 7 percent will.

For that matter, to say that it's an egregious error to use 9 percent when 7 percent is the right number because 9 percent is so far out of bounds that it's unreasonable—I'm not sure that I agree with that argument either. I'm trying to

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say that the things that we do should be based on demonstrations—I will call it science—that have some applicability. Then we can talk about whether they're the right ones to do or whether our assumptions should be different, rather than just focus on the results, because as I said, we don't know what's going to happen this year. We didn't know what was going to happen last year; we don't know what's going to happen this year or the next year. When we're trying to pick a return in one year, it doesn't work.

FROM THE FLOOR: But isn't it affected long term? It's not a one-year.

FROM THE FLOOR: It is. That's exactly what I was saying before. It is a long-term, but I'm not sure that the perception of it is.

MR. CASSIDY: I'd like to move the conversation to be more on FE topics. I would put that type of discussion more on just setting assumptions and other things.

MR. GOLD: I think you're right that that had little to do with FE. The FE story is that the expected return on assets is not part of the correct process, rather than that the expected return on assets is not correctly determined. I think it's a shame that, probably based on our interaction with clients, we have been caught out, so to speak, by a Warren Buffett being more aggressive than we might have been if we weren't interacting with clients. Our best estimate may have been stretched a little. I think that's a shame because the greatest asset we've had over my 30 or 40 years as an actuary has been that we were trusted more than the other professions. I think it's desperately important that we preserve that.

MR. CASSIDY: Let me talk about the process there. I'd like to get comments from you and other people. Some of the papers I've read have suggested that we should give, as opposed to point estimates of liability, confidence intervals or value-at-risk, using some of the other techniques from our actuarial peers to measure, determine and communicate our liabilities. Our idea about using just one spot discount rate and saying that's representative of what you would get if you did smooth out, use particular term structures and all those point rates, is insufficient. We should think more broadly about our measures of obligation and that measuring an obligation would be the first step that we could fix. Maybe we can fix the asset part later. Do you want to talk about that, or does anybody else have any thoughts on value-at-risk and changing the way we communicate the projected benefit obligation (PBO) as opposed to a point?

FROM THE FLOOR: In an FE environment, we're essentially discounting the liability at a single rate, namely some type of fixed income rate, irrespective of the investments. Therefore, the liability would be the same and value-at-risk would be more useful in terms of a cash-flow uncertainty. It would seem to me that choosing different discount rates would be counter to what FE has to offer.

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MR. GOLD: I agree. I want to ask a question that I think may move us into a different place. I think the question for all of you here as smaller plan actuaries is, do you have to learn anything about FE or not? That's the baseline question. You may conclude that there's enough that you don't know that you ought to find out at least a little bit more so that you can decide whether you can forget that little bit or whether you, in fact, must go deeper. That is all preparatory to another important question that you must ask yourself.

If you get seduced, converted, or educated (the word I would prefer) to the implications of FE for plans of all sizes, although I do believe size matters even within FE, how do you begin the dialogue with your clients? First, I would say, you should educate yourself, but I think it's fair for you to ask yourself those questions. Now, once you've educated yourself, how do you talk with your clients?

MR. CASSIDY: I deal with small to mid-sized clients. Often we get involved in investment consulting work as well as helping them with their valuations. It's a more comprehensive service as opposed to a large plan actuary, who would perhaps be more focused on just the valuation issues and not as much on the investment issues. Mid-sized clients ask me more asset-allocation questions about what to do and where they should take something. What answer do I give back? Do I give back the traditional actuarial answer of a stochastic forecast, talk about the funded status and all these other risks? Or do I continue on as you're suggesting, learn about FE and be able to give them another measure of an "answer"? Another measure might be the impact on shareholder value. That's the discussion that I'm struggling with. How do we take the FE and maybe change the way we communicate information back to our client to show them the impact of changes that they might want to contemplate

MR. GOLD: If some or all of the ideas of FE permeate the environment, we're all on a glide path to somewhere. We don't want to glide there only to find that we didn't bring our clients along. If you see that the handwriting is on the wall from the accounting, that there are certain elements of the funding which will change, if at all, much more slowly, how do you incorporate that? How do you warn your clients?

At the Vancouver symposium, Mark Ruloff made a comment that was quoted in *The Australian Actuary*. He said that the accountants have pretty much made up their minds. "There are some details, but the big picture of what they're going to do," he said, "is a train coming down the tracks. I'm not here to argue about whether it's the right train or the wrong train. I'm here to tell you to grab the wife and kids and get them off the tracks." In fact, it's not the wife and kids, of course; it's the clients. What do you want to tell them about the trains that are coming down their tracks and when do you want to tell them?

MR. CASSIDY: Marking to market and all those things that they're going to do are fine, but for the most part our clients are still going to be in equities. They're not going to go all the way, do a "Boots," to 100 percent fixed income. But how do we

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talk to our clients about the impact of plan changes or asset-allocation changes? What measure should we produce to help them make decisions about the impact of particular changes? Are our typical measures, such as forecast of pension expense and forecast of funded status, incomplete, insufficient and don't really get the depth that we should be going down to really talk about the impact and help our clients make better decisions?

FROM THE FLOOR: I apologize if I used a bad example because that was actually the point I was trying to make. The disconnect is between what we do and how it gets communicated to our clients. As we pointed out, shareholders aren't necessarily always the same as clients. Not using an FE example was a bad choice. My concern is that we do this work, communicate it as best we can and then it does get misunderstood. I know we're focusing on smaller plans. One of the groups that we didn't talk about because they tend to be larger plans is the public sector, the governmental entities. I do a lot of that work, as well as not-for-profits, and typically for those plans, since they don't have the same deductibility issues and things like that, we tell them their minimum contribution. There's no maximum. We make a recommended contribution.

We tell them what we think they ought to fund because we're dealing with a board. The board is not as sophisticated a client as a corporate client would be, so we literally tell them what we think. Over the last few years, with the downturn in the economy, some of these entities have said that they are not going to do that and they're going to fund less than the recommended amount. That's not even an issue with respect to whether those liabilities were understated in the first place, because we were taking into account that they're funded somewhat in equities and we were understating the liabilities. Beyond that, the group that makes the decision on how to fund the plan said specifically that because of budget considerations or whatever, they're going to underfund those plans. Even with the upturn in the economy, they're still getting to the point now where minimum contributions are much higher than they would have been otherwise, and they're going to have to come up with funding.

Coincidentally, at the same point, a lot of these, particularly governmental entities, have to look at retiree medical plans for the first time. So there's a tremendous push on those types of plans anyway. Again, my concern is that we can come up with these numbers that we tell our clients are the right numbers, but they can get misinterpreted as to the basis for that and why we think this is a better number. It's hard to explain to a client why we think this number that requires you to fund in more than we would otherwise tell you is a better number than this smaller number. The client looks at it and says, "That smaller number looks pretty good to me." That's the challenge.

MR. ADAM: I have an unrelated matter of interest on my agenda. When I came here, I was hoping that maybe someone would tell me that there exists a Bible or a "blue book" about financial economy so that either my students or other actuaries

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would know where to start. Where would you recommend someone start reading, or what should be read by the young actuary or the young pension actuary?

MR. CASSIDY: I would point to the material that Larry Bader and Jeremy Gold have produced in *The Pension Forum*. They also have a bibliography at the back of that, as well as some other commentaries and responses to those articles. Those would be the best sources. They are the sources that I've gone to in preparing for this and thinking about the topic.

MR. ADAM: That's what I thought you would suggest, but I was wondering if there is a new book on financial economy.

MR. CASSIDY: I had dinner with the chief economist at T. Rowe Price and I said to him, "I'm preparing for this speech on FE. Do you have any thoughts on that?" He said, "I don't know what that is." He's a macro guy and FE is a micro issue. It's also a combination of corporate finance and investments. Economics is a very wide, diverse area. You would have to go look in different places to get full information on it.

MR. GOLD: Modigliani- Miller and those citations are PhD-formal. There are many colloquial or MBA-level sources. I know it's on the syllabus already and it's not, "Go read the 1958 paper by Modigliani and Miller." Actuaries are generalists even if we have a science. We don't have to be medical doctors to understand underwriting, and we don't have to pursue root papers. We cite them because that's what you do in the literature, but there are intermediate MBA-level textbooks. There's Bodie, Kane and Marcus, which is on the syllabus. Brealey and Myers have been on the syllabus. Unfortunately, occasionally these people get sloppy and make mistakes.

On the other hand, Modigliani and Miller wrote a correction in 1960 or 1962 for their 1958 paper. In fact, Larry Bader and I had a little disagreement on how to present some stuff. Do we digest the economics and put it out in actuary-friendly fashion, which I would say is Larry's first choice, or, because the economics is so rich, so deep and so difficult, do we insinuate into it some teaching about the economics? When I have written alone, as I wrote a thing called, "What Next?" which was in the October 2003 issue of *The Actuary*, I tried to teach the concept of Pareto optimality. I could have translated that into some actuary speak, but I felt I would enrich the actuarial community more if I brought the economic speak into the actuary speak. We've been divided in many ways by common languages, not only from economists but also from investors and so on.

FROM THE FLOOR: Going back to FE, what's bothering me is that in many of the papers, the implication is that if we had full transparency, if we did not have the enabler of the opacity of accounting, many plan sponsors would effectively go fully immunized portfolios, effectively what I'll call "pulling a Boots." The United Kingdom has, or is very close to, something very close to transparency. There may still be some warts and things that need to be fixed with FRS 17, but it's a lot closer to

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transparency than anything we've seen before. I do understand that about 20 percent of the UK pension portfolios of qualified plans have moved from equities into bonds as a result. The average equity exposure has gone from 80 down to 60 (they were more equity than we were). However, what's bothering me is why, post-transparency—maybe it's too soon—we haven't seen more companies pull a Boots and go fully FE on the investments in the United Kingdom. I was wondering if anybody has any insights. FRS 17 has been delayed, but haven't some adopted it already?

FROM THE FLOOR: No.

FROM THE FLOOR: So is it just a matter of delay? But if you see the train bearing down on you and you know that the accounting will change, that it's just some minor details that they have to work out to coordinate FRS and IAS and the people running companies know this is where we will be in three, four or five years, don't they want to be ahead of the game? Jeremy is shaking his head.

FROM THE FLOOR: But wouldn't FE say that the accounting doesn't matter?

FROM THE FLOOR: But the accounting has been the enabler that has encouraged managers to ignore FE. If you put FE into the accounting, that enabler is removed. Now the managers are exposed to the transparency, and the analysts see through with clarity. You don't need a First Boston Credit Suisse or some of these other investment banking houses to say that FAS 87 is broken and they'll issue their own numbers. Every analyst will see it; every shareholder will see the great volatility of earnings and the change to equity. Then the managers of the company will no longer have the FAS 87 enabler to allow them to obfuscate, to use opacity and hide the volatility.

FROM THE FLOOR: But wouldn't FE say that the shareholders would be educated enough to know the difference, that if you were fully immunized, fully in fixed income, and totally marked to market, that the shareholders would value that company more than a company that had opaqueness or some exposure to equity?

MR. GOLD: What you have said is completely consistent with the efficient market hypothesis, which requires, for openness, transparency and a bunch of other things. But it really is not a necessary part of the dialogue. Again, that's from the Markowitz and Sharp portfolio selection, but what we have is Coronado and Sharpe, a different Sharpe, who have told us why an agency problem persists.

First, I want to identify the key answer here to your question of, why aren't they first adopters? Why aren't they ahead of the curve? The answer is a pure, rich and deep agency problem. The managers are not the shareholders. They know the difference and they know what they must deliver to today's shareholders, even though it may not be as valuable for three- or four-year-out shareholders.

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Coronado and Sharpe are two Federal Reserve economists. Julia Coronado presented in Vancouver. What they demonstrated is that the market is fooled. The opacity reigns. The earnings reported by FAS 87 are treated as every bit as good as all the other earnings that are reported, and I know that the FAS 87 earnings are awful. One great and important finding in Coronado and Sharpe is that a pension plan does not produce earnings that are in any way related to the company. It's simply the asset, liability and the expected return, yet the market is applying the corporate multiplier to pension earnings. If you are a 20:1 company, Coronado's and Sharp's econometrics showed that you're getting a 20:1 multiple on your pension earnings. If you're a 10:1 company, you're only getting a 10:1 multiple. That, to me, is sufficient to demonstrate that opacity reigns. It enables the managers to build up their various cookie jars and self-serving agency problems.

FROM THE FLOOR: People have talked very nicely about management presenting financials to shareholders and showing things to employees. That's all well and good, but when you talk about privately held corporations where management, shareholders and the most important employees are the same person and you can't fool yourself, how do you apply this? Can you get management to look at things reasonably and say it's in their own personal best interest? If that is the case, that's how I think it applies to the small company and to the small plan. If the accounting is wrong for a small company, it's wrong for a small company with or without FE.

FROM THE FLOOR: It is wrong for a small company for the following reason. If I'm the shareholder, I own 100 percent of the company. By putting the equities into the pension plan, I am taking dividends that would normally be taxed at 15 percent federal and making them taxed at 35 percent federal. I'm taking capital gains that would have been taxed at 15 percent federal and making them taxed at 35 percent federal. I'm better off putting the equities in my own personal name, not in the pension plan name, and putting bonds into the pension plan, even if I have to borrow. By putting the equities into the pension plan, I am giving a gift to the federal government at the cost of the shareholder, the singular owner of the company, for the same reason that if you have a portfolio, some of it is in an IRA or 401(k) and some of it is in your stock brokerage account at one of the big brokerage houses. What you should be doing is have your fixed income portfolio in your qualified tax-sheltered accounts, and you should have your equities in your own brokerage account. That would maximize your tax efficiency.

FROM THE FLOOR: Under current tax law.

FROM THE FLOOR: That's the tax law in the United States, Canada, United Kingdom—the English-speaking world. In the English-speaking world, that is where you end up.

FROM THE FLOOR: Actually, the small business owner might not fully comprehend FE. He probably does understand tax a bit, but there's one other advantage of the previously recommended investment approach. If the business owner has a DB plan

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and his business profits are correlated with that of the economy, if he's invested in equities in the pension plan and he has a good year personally, then he would love to have a higher contribution. Lo and behold, his pension assets have increased by 20 percent; we now tell him he has a lower contribution. That is not what he wants to hear.

The flip side is even worse. If he has a bad year and his income is lower, then he would love a lower contribution because he doesn't need the tax savings. Meanwhile, his pension assets invested in equities plummet. We tell him he has to make a higher contribution. He doesn't like to hear that. That provides an additional argument for the small business owner to invest within the pension plan and fixed income.

MR. ROBERTSON: I'd like to hear what people think would happen if suddenly all the DB plans in the United States would move to 100 percent bond portfolios. What do you think the result would be?

MR. CASSIDY: Morgan Stanley posed a paper, "Pension Missiles." They put an estimate that that would depress the equity markets by 8 percent to 12 percent.

FROM THE FLOOR: That's short term. Over a medium term, interest rates will go down, and bond prices go up as everybody tries to buy the bonds. Equity prices go down as everybody sells their stock. At some point, your interest rate is low enough and your company's stock price is low enough that as a CFO you float debt and buy back your stock. You effectively create the same beta to your company that you had before, but now what you've done is you've made it more tax efficient to the shareholder and you've increased value across the economy. In general, what you've done is you've lowered taxes total as you flow through to the individual and corporations, and you've lowered tax revenue by increasing the amount of after-tax that remains between the individual and the company because you're cutting tax payments by moving the equities into the more tax-efficient holder and the bonds can go over to the other holder, which doesn't care about taxes.

What you'll end up with is a restructuring of the capital markets where you'll have more leveraged companies. In that situation, the bonds themselves will become somewhat riskier because they represent a less diversified company, namely it's all in the company. It doesn't represent the diversified portfolio of the pension plan. As a result of being a riskier investment, they have a greater default risk. You can't buy the Treasuries because there aren't enough government bonds out there to fill up the pension system. You're going to have to have corporate bonds. Even if you get enough corporate bonds, they may become riskier bonds. Will they become pseudo-equity?

MR. GOLD: One of the very first lessons of Modigliani-Miller is that, even though the value of the company doesn't change, if you have more debt and less equity, the expected return on each goes up. If you have more bonds and less equity in the

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same company, the expected return of each goes up, and yet the cost of capital for the company remains the same. I think we'll leave this one as a problem for those who care, but solving it will give you some insight into the implications of leverage.

Remember that Modigliani-Miller does assume away some bankruptcy risks. The idea that the companies in general will be more leveraged is only partly correct; they will be more visibly leveraged because it's a diversified form of leverage in the pension plan now. They've borrowed to invest in the S&P, so these companies have leveraged themselves in the equity market, which affects their beta, but they haven't leveraged themselves against their own default risk, which, in fact, will be part of the new arena. But FE, focusing on the principal agent problem, says it's a good thing. It's a disciplining thing. Managerial cookie jars are opportunities for managers to dissipate shareholder value. Leverage, as long as it doesn't raise the probability of bankruptcy too high, disciplines managers. This was the underlying theme, combined with tax effects, which are also applicable here, behind the leverage buyout (LBO) movement. Despite the noises about the LBO movement, I didn't see anything that was particularly excessive about it. There may have been a few companies that ended up overpriced, if you read *Barbarians at the Gate*, and maybe RJR was not worth \$109 or \$111 a share, but the literature of FE says leverage keeps managers focused.

MR. CASSIDY: A lot of plans have been frozen lately. The clients have said they're done with this DB plan contributions' volatility, so we're going to freeze it. They've frozen it, but they typically haven't changed any asset allocation, or they've made very minor changes. I would love to hear your thoughts about talking with a client like that and maybe the ways to communicate that the client may want to look at the asset allocation and some other issues now that the plan is frozen.

FROM THE FLOOR: I think many of the freezes have occurred because it will now cost 7 percent or 8 percent of payroll for a pension plan. Before, it was 1 percent or 2 percent or maybe income. Let's go back about 25 years. I joined my firm a little over 25 years ago. In those days, when we did an actuarial valuation, the typical contribution was about 7 percent to 8 percent of payroll. Let's say 5 percent to 10 percent was the range that you would see for a typical pension plan. Now, why shouldn't it be that rate? Some may argue that there may have been some mispricing in management's perceptions as to the cost of the plan, but that the cost always has been there.

What happened in that 25-year period? Something else took the place of the pension expense. It was called medical care. Medical care costs skyrocketed. As the pension expense number came down, the medical expense on the budget line went up and ate into it. Compensation expense didn't get any savings from the pension cost expense reduction; it was eaten by medical. Well, now that we have to bring pension back up, medical isn't giving it back to us. It's just going to be on top of it. That causes management to stop and say that they can spend only so much on the compensation package.

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If pension is more of it, what do we cut? The easiest one to first look at to cut is the pension because that's the one that's going up. At some point, companies will sit back, look at this from a total compensation perspective and figure out where they want the moving parts. Traditionally, the DB pension has been the most underappreciated benefit because of lack of understanding, but I will challenge that.

I'm one of the early Baby Boomers. Let's go back to my mother's generation. People born in the 1920s, or a little before that, grew up in the Depression, with people hungry. When my mother talks of people, she doesn't say what they made or their position. She says, "They worked for the government. They got a good pension." "They worked for the post office. They got a good pension." It's never about how high they got in the organization or what they made. "They got a good pension." That's the mindset of another generation. The mindset of the next generation may be somewhat different. The way I describe it is, "I'm Monty Hall and I have something in my hand to give you. It's worth \$100. We have three doors there. Two of them are worth \$130; one is worth \$70. The expected value is \$110. Do you want to make the trade? You get more expected value. It's a little risk, but more expected value.

Let me describe what those numbers represent. The \$100 represents hamburger for life, guaranteed. You'll never taste sirloin, but you're guaranteed hamburger every day. The \$130 is sirloin for life. The \$70 is cat food for life. There's no going back. Two doors to one. How many people in the room are willing to take the trade? How many doors do I have to offer you before you're willing to risk it? 5:1, 10:1 or 20:1? You realize that volatility is very important. Now we've translated it from expected value to expected utility value. The down side going down on a utility function is extremely painful. As that perception comes back into the psyche of the worker, that DB promise will become much more valued. It will change the calculus of how you cut up the compensation package, and we may see that resurgence. The question is, as the pendulum swings, will we see the DBs disappear before the appreciation for them comes back?

MR. ROBERTSON: I'll make a quick comment about Canada because we've now had one high-profile conversion back to DB from defined contribution. That was in the press. It wasn't one of our clients, but we ourselves had two clients transfer back. One was a management group where the board decided that they would prefer that management focus on running the company rather than figuring out how much their pensions would be. The second one was basically a union group that converted out of DB seven or eight years ago. Everything went wrong. People weren't being educated despite best efforts. They were making bad decisions, and they were pulling money out of plans. The company just said, "If I'm going to spend the money, I want them to have the benefit." Of course, most of the employees went back into the plan given the option. I don't think the pendulum is going to swing very far back, that's the problem.