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PENSION FUND INVESTMENTS

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- o Philosophy
- o Goals -- How are they set?
- o Insured versus non-insured?
What is the marketplace offering?
- o FASB -- Effect on investing

MR. ERIC P. LOFGREN: Welcome to the panel discussion on Pension Fund Investments. My name is Eric Lofgren. I'm a consulting actuary with Mercer Meidinger Hansen. I would like to introduce the panelists joining me today. Roger Bransford is the National Director of Asset Consulting at TPF&C. Carl Hess is a consultant at Mercer Meidinger Hansen. Joe Macaulay is Actuarial Director of Participating Pension Services at John Hancock.

We will be talking about Pension Fund Investments. We will be discussing some history, conventional approaches that have been used over the past 25 years, how liabilities relate to investments, the state of the art as it is today, its development.

One of the purposes of this session is to encourage the pension actuary to look at both sides of the ledger sheet, the liabilities and the assets, and to get more involved in the investment process. With that in mind, I'm going to turn it over to Joe who has spent a considerable amount of time working with asset mixes in pension plans.

MR. JOSEPH P. MACAULAY: I will be taking you through the history of pension plans, to a great extent, and investments in pension plans.

When did we start having pension plans? A few existed prior to the turn of the century. The major ones were established at that time or soon thereafter at some extremely large corporations. An example is DuPont, whose plan was established in 1904. Other large plans included U.S. Steel, and other plans of that nature, as well as plans for the railroads. With the exception of the extremely large employers however, there wasn't much pension activity until around 1920.

In the 1920s, insurance companies played a role in helping to establish a few more plans for still some fairly large corporations by offering something called

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the deferred annuity. Under this contract, an employee accrues a small piece of benefit each year. The employer would purchase that benefit each year, with an annuity guaranteed by the insurance company. If an employee terminated before vesting, in those days vesting was at retirement, then there was an employer surrender.

The insurance companies didn't produce a vehicle different from this for a number of years. Therefore, except for a few large trust plans, the only game in town was the deferred annuity. It was a safe vehicle; when a person retired, his full benefit was funded. There was an additional thing that had to be done: the past service benefit needed to be bought at some point between establishing the plan and the person's retirement date. A plan was therefore developed to purchase this benefit. the deferred annuity vehicle worked very well because most of the plans were accruing benefit plans. The concept of final average salary was not as important as it is today. Inflation was also not a major concern.

The major growth in pension plans occurred after the start of Social Security. There was talk of the "three-legged stool." The private pension was one of the legs, and an employer had to establish it. During the war, we had more pension plan activity, partially because some plans sponsors used this as a way to encourage people to work for them, (with cost and wage controls you weren't allowed to raise salaries).

In the mid and late 1940s, the unions, especially the mine workers who negotiated in 1946, started bargaining for benefits. There were some tax advantages to funding pension plans which were codified in the 1942 Tax Act. The 1947 Taft-Hartley Act, technically called the Labor Management Relations Act, set up a method for joint administration.

The real growth in pension plan assets started in the 1950s. The insurance companies hadn't made any major changes in their contract forms. However, the trust companies and banks were forming ways of funding pension plans, thus creating more growth. During this time, the insurance companies were not very competitive because they were restrained by their contract forms and were unable to provide the level of investments in equities that people were interested in. Therefore, at this time, actuaries were not heavily involved in pension fund investment work, with possibly a few exceptions.

As we move from the 1950s into the 1960s, pension plans begin to invest in equities, (previously, they had either been in insurance contracts or bonds of some sort). The amount of equities involved grew rapidly. In the early 1950s, 20% of a pension plan's investment might be in equities. For some plans, this percentage grew to about 50% in the early 1960s. At this time, a fair amount of money was invested. Some of the larger plans began to consider doing a little modeling of their liabilities and assets; however, not much happened. There still were no real rules. The Internal Revenue Service had a set of requirements, which basically limited the amount that could be funded with tax deductible money. A minor rule existed which required that, if contributions were suspended, the unfunded was not to grow beyond the original unfunded. The Department of Labor had disclosure regulations which were intended to protect against bad moves made by pension plans particularly in the area of expenses. Another rule, under general trust law, was that everything had to be for the exclusive benefit of the participants.

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During the 1960s and early 1970s, there were some changes. In the early to mid 1960s, insurance companies started issuing separate accounts. This brought insurance companies back into the game, (at least for plans that wanted to use equities and have more flexibility). From the 1950s into the 1960s, insurance companies had designed different vehicles which no longer had all the restrictiveness of the deferred annuity. As the 1960s wore on, people were looking at their asset mix, (primarily looking at efficient frontiers and more efficient investments), while ignoring the liability side.

On Labor Day, 1974, Gerald Ford signed the Employee Retirement Income Security Act (ERISA). What did ERISA do? Suddenly, funding rules existed: minimums and maximums. The maximum funding rules were those that existed before ERISA, with a little change in the codification. The minimum funding rules, however, required more money than some plans were previously putting in. ERISA also produced codification of the vesting rules. The longest vesting period, with some stretching on the rule of 45, was now 15 years. Because of ERISA, a large amount of money was coming into plans. There were also the ERISA Fiduciary Rules which caused plan sponsors to look at what they were doing and act prudently. Many plans went through the motions of doing their first asset and liability study as a way to show their prudence. ERISA caused major changes in the pension marketplace: people went into the manager selection business, investment bankers started providing asset studies.

A couple of other things happened as we go from the 1970s into the 1980s. In 1977, FASB made their first attempt at rules. In 1985, these rules were finalized, resulting in Statement 87. This had a major impact (which will be discussed later on in this session). The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) and the Deficit Reduction Act of 1984 (DEFRA) did not produce a large amount of pension related changes. The Omnibus Budget Reconciliation Act of 1986 (OBRA) created a few changes, all which are minor except for a change which restricts funding. OBRA had some further impact on the pension community. Basically, the world has changed and become more complex.

MR. ROGER C. BRANSFORD: I have spoken at a number of Society meetings over the years. I am not an actuary; I've worked for actuarial firms during the last 10 to 12 years. I've spoken on an array of subjects that have an asset focus to them. In the early years of having these conversations, it was a little difficult, sometimes, to get people's attention. It seems that its getting easier and easier.

What I'd like to do now is talk about what I will define as conventional asset wisdom, during the pre-ERISA era as well as post-ERISA. As Joe has talked about, in the pre-ERISA days, there was a tremendous incidence of insurance contracts. As some time past, bank trust departments and investment counseling firms became active players. We had the emergence of balanced management. We saw situations that could have ranged anywhere from 50% stocks/50% bonds to 70% stocks/30% bonds. These types of asset mixes became the conventional wisdom as to what was correct. Why were plan sponsors doing what they were doing? Basically because everyone else was doing the same things. If General Motors and AT&T were doing it, then it made a lot of sense. The problem was that this presumption was fallacious.

In the early 1970s, I was asked to sit in and critique the work of another consultant for a Philadelphia corporation. I sat there and listened to the consultant present a proposed statement of investment goals and objectives for the

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organization. It became obvious to me that what was being proposed had absolutely no relevance whatsoever to the particular pension plan that we were dealing with. When I voiced my concerns, the response I received was, "this statement of objectives is almost word for word that used by the EXXON Corporation and if it's good enough for EXXON, it's probably good enough for us." I told him afterwards, "that's tough logic to fight."

Conventional wisdom really got us carried away so that we weren't really thinking too much about the nature of the problems that we had.

The role of the actuary in the pre-ERISA environment was a fairly straightforward one: to determine what the plan's contribution was each year. There was not a lot of interaction between the actuaries and the investment managers. We'll see how things have evolved rather dramatically.

In the post-ERISA market place, conventional wisdom started to change; 1973 and 1974 was a time when there was a dramatic equity decline in the market. As a result, senior management began to pay a lot more attention to the pool of assets and to the whole pension area. ERISA started people thinking about the planning and documentation that should accompany a retirement plan. The combination of the 1973 and 1974 equity market with ERISA had a dramatic effect by forcing people to pay attention.

At this time, we begin to notice an increase in diversification. A little bit of diversification is good but too much may become counterproductive, costing the fund too much money. Looking at certain large size corporations, we saw that they were ending up with 20-30, in some cases as many as 50, investment managers. Each manager, thus, became in charge of a relatively small percentage of the total pool of assets. I don't care what the gains are from a risk-reward point of view, what can even the best return from such a small percentage do for the total retirement system? It could justifiably be argued that the typical retirement plan was not diversified enough back in the early 1970s. In certain instances, this seems to have gone too far and is actually harmful.

In addition, in the post-ERISA era, we saw the advent of the computer. Computers enabled us to incorporate more variables into our models. They also allowed us to test more hypotheses and use basic management science in this area for the first time. Finally, they freed us from doing manual calculations, allowing us more time for thought and analysis.

Post-ERISA also marks a time of investment specialization. We now had the option of using different investment managers each specializing in a specific area such as stocks, bonds, real estate, or venture capital. Many firms concentrated on one specialty. This lack of a fairly diverse product line led to certain problems. As the market changed, investment performance fluctuated.

In the post-ERISA marketplace, there was a tremendous debate that relates to the active-passive issue. From my point of view, I don't think it's really a debate, I think there's a role for both active and passive investing. When dealing with portfolios of billions of dollars, there seemed to be no choice but to choose passive investing. If you listened to active investment managers, who were receiving .75% to 1% fees, you started hearing that passive investing was un-American. We're just now starting to put all the tools together to develop the consulting experience that's required to understand this dilemma.

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Another phenomenon is the hub and spoke concept, which became very popular in the post-ERISA marketplace as it pertained to managing assets. Under this method, you would come up with a core approach with equity that closely resembled the characteristics of the Standard & Poor's 500 (S&P). Next, as the spokes, you would use specialty managers such as contrarians. Hopefully, the sum total gives you something more than you could get by just buying an index fund.

A natural phenomenon, worth looking at, is the marketplace life cycle. Businesses go through life cycles, products go through life cycles, and we're going through in the post-ERISA era, our own industry life cycle. What we were going through was the phase marked by a rapid, somewhat unsophisticated growth spurt. It was a marketing focused marketplace. A greater emphasis was placed on marketing the product rather than on pricing. The marketplace was dominated by people who failed to understand the essence of the problems surrounding them. Not too long ago, people, very simplistically, attempted to match long term liabilities with assets of a similar duration. Maybe it's right, maybe it's wrong.

Another phenomenon was the elimination of fixed commission rates by the New York Stock Exchange. That, in its own perverse way, may have had more negative impact than we'll ever understand. When fixed rates go away, what happens? You have to replace the income. How do you replace it? You either have more turnover, develop new types of security classes, or have more mergers and acquisitions. Wall Street is very transaction focused. So here, we're trying to work with these long term obligations while Wall Street was pushing for transactions.

Performance measurements are often talked about in relation to the long term. The longest term that I've seen anyone use has been the market cycle. However, people usually get nervous when this goes beyond three years. So, unknowingly and unwittingly, we've created a nation of short term investors.

It has been interesting to see the role of the actuary evolve since 1974. The actuary has become more of the consultant, has done more of the bridging, and with FASB Statement 87, OBRA, and other tools, is now playing a greater role in the overall management team. We now find ourselves in a very different world where the people dealing with the assets and the people dealing with the liabilities can no longer simply ignore one another.

At this stage, what I'd like to do is turn the podium over to Carl Hess who will be talking about some of the things which are changing and emerging.

MR. CARL A. HESS: I'd like to say a few words concerning one recent trend in pension plan investments: to take account of the liabilities of the plan when formulating an asset strategy. That's building the bridge that Roger talked about. While I'm not going to discuss particular strategies themselves, I'm leaving that to Roger and Joe, I'd like to go into the circumstances that produce this new attitude, while examining the potential need for such an approach. We'll also take a look at what liabilities of the plan should be considered and some of the theory behind achieving a goal in the process of what I like to call net portfolio management. The net portfolio is the assets of the plan less the liabilities of the plan considered together.

Some potential nightmares that the plan sponsor can face in these uncertain times are FASB, OBRA, corporate mergers and plan termination. Each has its own

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implications, and each in turn has led to a reconsideration of the role that liabilities should play in your asset strategy. Each means increased volatility in the pension plan because each forces marking the liabilities to market just as the assets have always been. Each dictates that the pension trust cannot be separated from the pension plan. The accountants have realized this. The government has realized this. The corporate raiders have realized this. Its about time that the plan sponsor, his investment advisors, and his consultants realize this too. Let's take a look at what these things indicate we should be aware of.

The advent of FASB Statements 87 and 88 made defined benefit sponsors sit up and pay a little more attention. Suddenly, the pension plan had a direct impact on corporate earnings as pension expense, or pension income, flows into the income statement, as a significant pension liability shows up on the balance sheet, and as stockholder equity dwindles. These particular issues are things that the chief financial officers tend to care about. After years of neglect, the pension plans are starting to get some increased attention. Statement 96 is on the horizon. A deferred tax liability for the pension plan is a real possibility -- just one more balance sheet problem.

With the deteriorating situation of the Pension Benefit Guaranty Corporation (PBGC), the government in 1987 was forced to pass the Pension Protection Act, which is part of OBRA. OBRA dictated that the plan's liability position, with regard to its asset holdings, would henceforth have a far more direct impact on the cash flow requirements of the plan. OBRA linked the plan's funded status, therefore recognizing the net portfolio as the determinant, to PBGC premiums, minimum and maximum funding requirements, and allowable unsecured liabilities. For a well-funded plan, that with a funded current liability percentage of 150% or greater, the impact on cash flow is in a downward direction, resulting in, for now at least, diminished contributions. For a plan falling in the 100% to 150% range, the picture remains relatively unchanged from where it was pre-OBRA. For a plan with a ratio under 100%, the increased cash flow on behalf of the plan could be quite severe. PBGC premiums may increase sixfold over the pre-OBRA levels, while funding contributions may go up three to four times. These requirements could apply to the company when cash flow is most needed -- that's why these plans were poorly funded in the first place. In addition, these plans have severe strictures placed on their ability to improve benefits. Significantly increasing funded liabilities by amendment will require that a surety bond be posted. As OBRA has divided plans into three groups based on assets and liabilities, the idea of the net portfolio, sponsors may have concern that their plans now slip from the first group to the second, or the second to the third with its harsh attendant penalties.

Another factor leading to the reexaminations of liability's role in the investment process, is the boom in corporate mergers and acquisitions in recent years. Here, the net asset position of the plan becomes extremely important. Even if the FASB had never forced recognition on the balance sheet of badly funded plans, the proposed acquirer of a corporation certainly would, by factoring the plan's liabilities as well as its assets into an evaluation of the net worth of the entire corporation. Once a sale is finalized, it may be necessary to formulate a strategy which will preserve the net portfolio of the plan as was contemplated in the original sales agreement. That's necessarily a liability-linked strategy.

The fourth issue is plan terminations, where we see a boom in recent years. Here's another example of a situation where the plan sponsor has no choice but to examine the relationship of plan assets and liabilities. If plan assets aren't

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sufficient to cover the plan's accrued liabilities upon termination, there are a few distinct problems, such as the potential debt the sponsor may owe the PBGC, rapidly approaching 100% of net worth. Alternatively, the plan sponsor may not be able to terminate the plan at all, or with highly adverse consequences. On the other hand, with an overfunded plan, the size of the reversion obviously depends directly on plan liabilities.

In summary, I think we can all see that there are a few reasons to examine the plan's liabilities while formulating asset strategy.

From looking at liabilities, we turn to choosing a liability. The liabilities that I will be discussing today are the Vested Benefit Obligation (VBO), the Accumulated Benefit Obligation (ABO), the Projected Benefit Obligation (PBO), the Present Value of Benefits (PVB), and the PVB with all future Cost of Living Adjustments (COLA). Let's take a look at these liabilities and see why a plan sponsor might potentially choose them as a target.

Historically, the VBO and its subsets have been the primary targets for liability-linked asset strategies. Immunized bond portfolios are one example of this. Alternatively, we have insured plans where a side fund might provide for all nonretired lives, and annuities are purchased only on behalf of retirees. Immunized bonds can and have been used to lower sponsor funding obligations. The VBO, or a subset, being viewed as the most easily immunized or annuitized, was and is a natural target. A newer use of the VBO as a target is for devising a strategy to avoid excess PBGC premiums, as the variable rate premium calculation is based on the unfunded VBO.

I know of a large Taft-Hartley Fund which has a monitoring strategy in place to ensure that the plan will never be unable to cover all vested benefits if the liabilities are marked to market. This mechanism enabled an agreement through collective bargaining as the employer and employee sides were at an impasse over benefit improvements.

Another frequently considered target is the ABO. I've already mentioned the effect the ABO can have on funding and security, not to mention profitability and company value. The market value of the ABO is the offset to the assets. The law says that the ABO cannot go away, except in really dire circumstances. The net worth of the plan directly depends on the assets less the ABO.

Should the plan be in a more favorable funding position, another possible target is the PBO. The panel has covered this subject in more than adequate detail. The PBO emerges as the natural target for controlling volatility of pension expense.

Now we come to the situation with the plan sponsor who has everything, including a very well funded plan. Should the plan you're considering have assets exceeding PVB, the message you should give is clear. The game is over. You've won. Lock it away. Before you do that, however, it makes sense to take a look at what you're locking away. Often times, the written plan is not the entire plan. Two examples of this are when a career average plan hasn't had an update in 15 years and when the plan sponsor has made it a practice of increasing retiree benefits every three or four years where the implied promise isn't the written promise. What you're looking to lock away is the total promise.

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We have looked at some areas of potential sponsor concern and the plan liability targets associated with these areas. Let's take a quick look at how plan sponsors actually view some of these issues. We did a survey about ten months ago at Mercer Meidinger Hansen targeting over 100 Fortune 500 Company CFOs. We had a response rate of about 22% (since this involved CFOs, we feel this is a pretty good response). Some of the results, which we found quite interesting, were as follows. We asked if Statement 87 had caused a change in asset strategy. Only 17% said yes, (about one in six). We asked about their motivation: did they feel that OBRA provided an incentive for liability-linked asset strategies? Over one third said yes, showing some developing interest in this area. Are plan sponsors now more likely to consider liability-linked asset strategies? About one quarter said yes. We don't have overwhelming interest yet, however, the responses to this question indicate a lot higher interest than would have been shown a few years ago. We furthermore asked which of these things were most important to the company: linking investments to pension liabilities, re-examining asset allocation after the October 1987 market decline, investment in foreign securities, protecting the portfolio against equity market declines, or other. The crash weighed heavily on the minds of nearly half of the participants; 48% chose re-examining asset allocation after the October 19, 1987 market decline. Linking investments to pension liabilities came in second with 17%. Investment in foreign securities and diversification issues tied for third with other, at 13% each. Lastly, protecting the portfolio against equity market declines (portfolio insurance) received 9% of the vote.

We have seen that there is some interest in developing a liability-linked asset strategy. If this strategy is to be pursued, it's necessary to understand how liabilities behave. The first point to note about liabilities is their long term nature. They are usually longer than any other obligation a plan sponsor has. It's been a fundamental part of the actuary's repertoire to produce the projected cash flows which represent the liability. As we know, these cash flows often stretch out over 50 or 60 years. Using duration as a measure of length, the targets that I've mentioned have durations of nine years on up (or possibly six years on up, depending on how aggressive you want to get in your interest rate). However, we'll talk of duration as price sensitivity where the change in present value is a function of interest. Under this measure, retirees will have a duration of six to ten (6%-10% price sensitivity to a 1% change in interest rates). The VBO may have a duration of around 12; ABO's duration may be as high as 13. The PBO and PVB aren't merely based on demographic assumptions, with the exception of the interest rate. A salary scale assumption directly determines what the duration of PBO and PVB will be. If you assume that real wages remain roughly constant, independent of merit and productivity raises, then PBO and PVB will be relatively inflexible to changes in the interest rate as the spread between interest rates (discount rate) and the salary scale remain roughly the same. If, on the other hand, this assumption is not made and the salary scale is partially tied or not tied at all to discount rates, then PBO and PVB duration will be much longer.

We know that the liabilities of the plan are long term regardless of their duration. Since we can model the projected cash flows of any liability target we choose, the set of projected flows can be equated with a portfolio of theoretical bonds with unusual looking coupons. In practice, long enough bonds may not be available but the inclusion of synthetic instruments with the bonds will usually suffice. Since a defined benefit plan is an indefinite promise on the sponsors part, unlike a defined contribution plan, the plan's liabilities, in essence, behave like a short portfolio on long security. This comes as a shock

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to many plan sponsors. I have one client who considers himself very conservative, and thus, likes to keep his money fairly short. When you point out to such a client that he's actually taking a tremendously aggressive position because his liabilities are very long as he has basically sold short a whole bunch on long bonds, the client tends to stop and think for awhile. A liability linked strategy must therefore look at the net portfolio, (the long position in assets and the short position in liabilities). Investment modeling must reflect this view.

Traditionally, the judgment process used in determining asset allocation has been the efficient frontier. The efficient frontier attempts to determine the range of optimal trade-off between risk and return. In light of the fact that we are now trying to look at the net portfolio, we must redefine the efficient frontier to reflect what risk and return mean for the net portfolio. The efficient frontier of optimal portfolios must be liability-linked, market-related, and geared to the performance of the net portfolio.

Let's contrast the old and new efficient frontiers. Under the old version of the efficient frontier, the objectives were to maximize expected asset return, while minimizing asset volatility. If we now redefine risk and return in terms of the net portfolio, our new objectives are to maximize net asset growth while minimizing net asset volatility. Let's look at what this mean graphically. Under the old efficient frontier (see exhibit 1), the range of optimal portfolios branched from an all cash portfolio which provided minimal risk, to a portfolio of all stocks, (stocks were assumed to provide maximal growth over all other asset classes). Turning to the new efficient frontier (see exhibit 2), remembering that we're now talking about the net portfolio, we find that stocks still provide the highest rate of net asset growth over the long term. However, a portfolio of immunized bonds (cash matching or annuitizing the liabilities) now provides the lowest level of net asset volatility, as assets move in tandem with liabilities. The all cash portfolio lies somewhere off the efficient frontier now, as it provides a lower rate of net asset growth than a portfolio of immunized bonds over the long run, even though it has lower volatility.

This is a new ballgame. You are the consultant to the plan sponsor. What's your position going to be? The actuary has a definite role to play in this process. The liability-linked goals are complex and the expertise that the actuary may provide is essential to their successful completion.

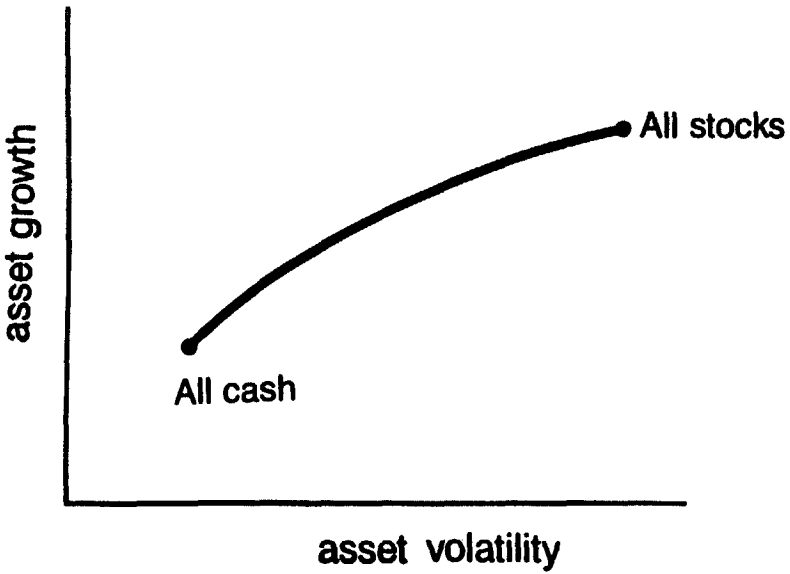
Is cash flow important? Is not having balance sheet liability important? The first step is to look at the sponsor's needs. Next, determine what's feasible for the sponsor. If the plan is only adequately funded, PBO may not be the most logical target to choose (certainly PVB wouldn't be). You are the best person available to discuss the liabilities of the plan with a reasonable amount of expertise and knowledge. Certain investment banks will claim a high degree of expertise, which they undoubtedly have. However, the consulting actuary for the plan has the greatest familiarity with the plan's liabilities. The last place for the actuary to look out for is the coordination with all parties. It's up to you to build the bridge now. Too often, the actuary has just sat back and once a year, comes in with his report. Recent developments have made pension plans an ongoing process, and the care of the plan's undertaking an ongoing phenomena. The actuary can't just sit back and once a year come into the picture anymore.

MR. BRANSFORD: The good news is that we are able to identify problems that a plan sponsor may have far better today than in the past. FASB Statement 87

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EXHIBIT 1

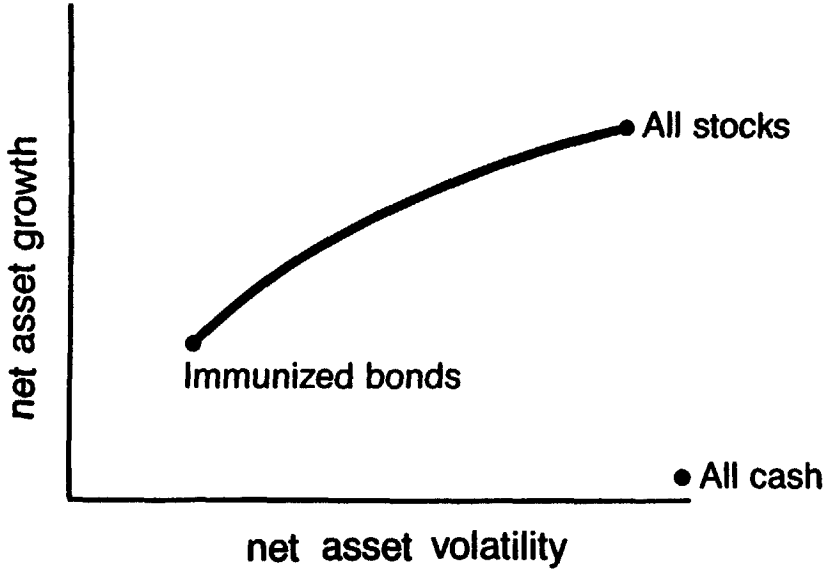
Old Efficient Frontier



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EXHIBIT 2

New Efficient Frontier



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and OBRA have helped to focus attention in this area. Beating the S&P 500 or the Shearson Index really doesn't have much meaning anymore, except on a purely coincidental basis. We're now trying to understand what it is that we're attempting to solve. The bad news is that we're also at a stage where we really haven't created much in the way of solutions. We're dealing with many off-the-shelf type products, which may or may not have the characteristics that help us solve the problem.

If we came up with a manner of investing that has an excellent long-term expectation of return and an attractive risk profile which is able to move in concert with long-term liabilities, we'd probably attract some interest. Right now, the surrogate for this is long bonds. What if we had stocks which did the same thing? I think what we're going to find in the near future is that the ability to bridge and create investment products, or to tailor existing investment products to the needs of a plan, will grow more significant and dramatic.

I also believe that the tools which we have available to us will start undergoing more changes. Everyone has a model that can be inputted with liabilities and assets to produce efficient frontiers. The problem is that, despite having models that use interesting numbers such as expected return, expected standard deviation, and cross asset correlation and produce numbers that are useful, they may be irrelevant to what we're trying to solve. They may also be accepting too many things at face value. It's not clear that we understand the relationship between these asset classes.

I think what we will be seeing in the future are structural economic models that make a little more sense than what we're using now and which tremendously challenge and question conventional wisdom. I did a small informal survey within the consulting community, not too long ago, which looked at the kinds of assumptions that were being used in these models to create efficient frontiers. You would not believe the tremendous variance that we found, not only in their expected return but, more startling to me, in the standard deviation and cross-correlations that are assumed. Depending on the magnitude, these items could have a big effect on the results. For some firms, the projected standard deviation for real estate was as low as 4%; for a firm such as ours, this value is probably somewhere between 15-18%.

In the future, we will be questioning and challenging many areas. The tools and the investment product need to catch up with the mind set and thought processes that we're developing in order to try and solve these problems.

If you were to go back to pre-ERISA days, you would find documents that basically stated, "do all good and no evil." Probably about three quarters of the statements of goals and objectives which still exist today don't say anything substantial. The biggest problem with these statements is that people tend to operate under the illusion that the statements lay out some sort of strategic plan.

Liabilities lead assets. They do. FASB Statement 87, OBRA, ERISA, and the sponsor's fiscal health all lead assets. They're not going to force you to deviate from what you'd probably do under conventional wisdom. However, they do lead assets. Asset allocation is the key determinant of investment return. We see it all the time and it's true. If we could tattoo it on our foreheads, we'd be doing ourselves a tremendous favor. Think about the typical plan sponsor and where his time gets spent. The time doesn't get spent in developing and implementing

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a plan in order to win the game. Instead, we expend our energies picking the ultimate investment manager. Asset allocation should really be the key issue.

Form follows substance. Product flows from specific needs. Why is it that we just accept a product that somebody is pulling off the shelf as opposed to really trying to understand the nature of the product that would satisfy the specific needs in question? Of course, there are obvious limitations: you need a certain amount of liquidity in the marketplaces, and you're not necessarily going to create different asset classes. However, we need to apply thought and creativity to our problems in order to remove us from this situation of being victimized by merchandising in the industry.

We're in a maturing investment industry. We're seeing and will see more product development. In the defined benefit area we won't have as many units of business being created as we had before. Proportionately, we don't have the dollars flowing that we had before. However, we will see more product. This development, hopefully, will take place with the liability and asset communities interacting far more than in the past. The focus is on sponsor problem solving. It's not on the actuary who is trying to calculate the liabilities and come up with some contribution number. It's not on the asset people who are trying to outperform an index or a group of managers. The exercise encompasses the particular needs of the plan sponsor.

Fees are another area where we'll be seeing some changes. Everybody negotiates fees in the investment management business today. These fees will somehow be related to the success, in aggregate, and individually, that the manager has in achieving the stated goals.

Computers and passive index products produce an incredible array of products for sponsors of all sizes. All of you here, whether you are working for insurance firms, consulting firms, or other organizations, are dealing with a wide variety of plan size. What's available today as compared to five and ten years ago, is remarkable. What will be available five years from now is going to be extraordinary. You can almost synthesize any type of active product you choose on a passive basis now, for a fraction of what the active fee is. You can create almost anything you want. With the technology as it exists today, we're going to see new and different things provided by banks, insurance companies and counselors.

Diversification, the emerging asset wisdom, will be changing in the future. I think we'll be seeing some real questioning of asset classes. Why is the historic conventional wisdom legitimate? I think you're going to find some questioning as to why we end up in eight different asset categories. Within asset class, I think we're going to see fewer managers. I believe that the next 5 to 15 years are going to be tough times for some active managers. For organizations that have not diversified, I wish them luck because it won't be easy for them over the next several years.

I think that five or ten years from now, we're going to look back at the current state of performance measurement and deem it a grand irrelevant exercise. Presently, self interest and large amounts of money have contributed to a promotion of the status quo. I think, in the near future, we're going to see a radical change.

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Investment managers will have to become much more focused on doing what they're supposed to do, as opposed to just trying to beat an index or a group of other managers.

Perhaps, for this audience, most importantly is the role of the actuary. With the advent of FASB, computers, OBRA, and new vehicles, I think what we're going to see in the next five years is an extraordinarily interesting time as it pertains to defined benefit plans for the actuary, a time where the actuary's contribution to the plan sponsor is going to an invaluable bridge building experience.

MR. MACAULAY: What does your plan sponsor want to do and what does he have to work with? The reason I ask this is that one major concern of plan sponsors is looking at, what Carl called, the net asset (some people call this surplus management). Let's look at the case of the sponsor who does not have much assets. He's worried about the net liability that he has to show on the balance sheet at the end of the next year, (where the net liability is measured by the excess of the ABO over the fair value of plan assets). For plans with very low assets, this is a major concern.

A large number of plans that we look at have a fairly good asset position. Many major companies will be having pension income for the next 15 to 17 years. At the adoption of FASB, their plan assets were significantly in excess of the PBO. This excess produced a transition asset which doesn't go on the balance sheet initially but rather one amortization piece at a time, (unless you get involved with special transactions). Here, a plan sponsor is concerned about how to handle the surplus.

A number of other plan sponsors do not want their pensions expense to change much. There is no way that you can guarantee this; you have to do what you can to try and make this happen.

The problem is that somebody might complain if a pension income item of ten million dollars becomes six million dollars. This may sound like a very major move when in fact, it is caused by a not too dramatic move on either the asset or liability side. Therefore, you really first have to determine what the plan sponsor considers his most important aspect.

Insurance companies have billions of dollars of old insurance contracts that are in existence. Most plans, except for those of the very largest sponsor, still have an insurance contract somewhere. These contracts can be the deferred annuity type that I talked about, although very few of them are. The majority of them are IPG contracts or deposit administration contracts. The question is, what do you do with this present IPG contract? The first thing to do is learn how the contract works. You also want to look into how to report this contract for FASB. If you've already done a FASB statement for a sponsor, then you've picked the method of reporting the contract.

It is possible to report an IPG contract as an annuity contract in FASB terms, (IPG contracts are annuity contracts but FASB has a specific definition of an annuity contract). In one plan that I know of, by reporting the IPG contract, which guarantees the liabilities for those retired, as an annuity contract and excluding assets from the plan equal to the liability, the total volatility of the plan was reduced, for FASB purposes, because a piece equal to the liability had been completely immunized. This is one approach. If you do not elect to take

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this approach, you should at least learn something about the characteristics of the contract. One thing to look at is how the value changes with changes in the interest rate climate, (effectively, that is determining the duration). If the contract is participating, you need to get a starting value of the participation under Statement 87. You do not have to check it very frequently since they allow you to amortize it down.

It's important to understand how these contracts work. One gentleman called us to ask some questions and was rather surprised at how much information we were willing to share with him on the action of the contract. It is possible to determine the duration of the liability and the duration of the contract market values but the first thing that you have to do is learn how the contract works. In general, most of the contracts that are in place can work very well with what you're doing, but you have to work with the insurance company initially. The insurance company should be able to provide you with sufficient information so you can do efficient reporting for FASB and information on whichever approach you want to make use of. The main point I'm trying to get across is that it is important to make yourself and your client knowledgeable of what you have.

MR. LOFGREN: I think the mistake many have made, especially after Statement 87, was to substitute one new objective of minimizing pension expense volatility for the two old objectives of maximizing expected return and minimizing asset volatility. That's tantamount to a subtraction of the objection of maximizing long term returns. That's a change of risk posture. As Carl discussed, you can change from the old efficient frontier to the new efficient frontier based on an objective of maximizing net asset growth and minimizing net asset volatility, without taking anything away and without changing your risk posture. Therefore, we're really talking about adding an objective of minimizing surplus volatility while still recognizing both old objectives. You can move to the new conception of investment risk without giving anything up. The portfolios on the frontier have the least net asset volatility for a given expected asset growth, which could be the same asset growth you had all along. Recognizing the liability in the asset allocation process can be done without saying we're going to look at the short term instead of the long term. We're still looking at the long term, (we're not going to give up anything that we've had before) we're just going to see if we can be efficient over the short term as well. This brings liabilities into the process much earlier than they have been before, at the very first step in asset allocation. This is much earlier than in the typical ten year simulation asset/liability study, where the asset allocation at the beginning would be purely asset based and you'd circle back around. A new efficient frontier brings liabilities and assets in together by looking at a net asset.

MR. THOMAS P. TIERNEY: I have a question which stems from a comment made: products swell from specific needs. My question deals with more of an administrative need rather than an investment need. I see a need now in the marketplace for a new product called Group Universal Life. It's not being made available, as far as I know, to qualified plans. Joe, do you know of any companies that are planning to make this available inside qualified plans?

MR. MACAULAY: No.

MR. TIERNEY: Do you see any hope on the horizon?

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MR. MACAULAY: I don't directly, however I'm not working in the appropriate area to be qualified to answer your question. I will, if you're interested, ask some people in the Group and Universal Life areas.

MR. RALPH J. BRASKETT: I'd like to go back to some basic definitions. Carl, what are you calling the net asset? Is that assets over any or all of the liabilities that you've mentioned?

MR. HESS: Yes, it depends on your liability target.

MR. BRASKETT: So it's the excess of assets over the liability target that you've chosen?

MR. HESS: That's correct.

MR. LOFGREN: The liability target chosen would depend on the particular plan and the particular situation.

MR. HESS: It depends on the particular objective that the sponsor desires.

MR. BRASKETT: Isn't every plan sponsor's goal still to earn the highest possible return to ultimately bring his cost down? Are we moving to where there's a basic equation for a mature pension plan?

MR. HESS: There is a basic equation, yes, but short term fluctuations can have adverse effects on the sponsors financial health. If the sponsor cannot afford the short term cash flows that are necessary in order to fund the pension plan given unacceptable volatility, then a slightly different risk posture is appropriate.

MR. LOFGREN: The problem is, we're dealing with a variable time frame. The life of a pension plan can be cut short. It was this concern that prompted the PBGC to push for the new minimum funding rules and PBGC variable premiums under OBRA. At the enrolled actuaries meeting in January or February of this year, which was held right after OBRA, I asked Kathleen Utgoff, who runs the PBGC, if she realized that these new rules could effect the fundamental asset allocation between common stocks and bonds in this country and could have a big effect by moving funds towards bonds. Her response was, "Yes, they should."

MR. BRASKETT: She's in the insurance business. It's very clear that they want to prevent another two or three steel companies from going under.

MR. LOFGREN: Right. The asset/liability ratio has been called the benefit security ratio, and the PBGC protection equals participant protection in a situation where a plan ends early. As I was saying previously, it is a mistake to talk about this as a new objective in place of the old term objectives. Do both. Maximum long term growth realizing that there are efficient and inefficient ways to accomplish this looking at the short term as well. If you don't even consider this, the asset allocation could be grossly inefficient.

MR. BRASKETT: I have a question for Mr. Bransford. What's wrong with the old goal of beating the S&P?

MR. BRANSFORD: It may be a legitimate objective; however, it may be purely coincidental that its legitimate. All I'm suggesting is that this objective needs to

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be examined in the context of what you're trying to do for the equity portion of the plan. If you're hiring a manager who has a risk portfolio that doesn't look anything like the S&P 500, you really need to look at things on an adjusted basis. The S&P, in many situations, is a convenient item to use because its easy to look up and can be bought very cheaply as an index fund. You need to make sure, however, that this measure coincides with the aggregate objectives and profile that you're trying to accomplish with the asset strategy.

MR. BRASKETT: Isn't the whole issue still to do the best possible job with your plan's assets consistent with some safety (the Fiduciary Rules of ERISA), in order to lower your costs?

MR. BRANSFORD: With a caveat that the cost may not be the only issue. If I were currently running a public company, and FASB was really impacting my income statement and my balance sheet, subjecting me to surprises either on the up or down side, I'd be interested in my personal, physical, and financial health as well. However, by and large, what you're saying is correct.

MR. BRASKETT: What you're really saying is that we have all these other short term problems like the president's bonus and how FASB hits the balance sheet, the income statement, and his share of the pot?

MR. BRANSFORD: That's correct. It becomes a balancing exercise that we go through. Clearly, under ERISA, or any other common sense guideline, the long term interest of the beneficiaries has to be what dominates.

MR. CHRISTOPHER (KIT) S. MOORE: I'd like to ask a question concerning performance measurement services. Roger made some comments that weren't complimentary about the services. We've all done a little bashing of performance measurement services because sometimes they encroach on our own field of consulting and sometimes they make simplistic comparisons of results. I hadn't heard anything serious about the inaccuracy of the comparisons recently. Is there a general feeling that performance measurement services are on the way out or that they're not valid as a rule?

MR. BRANSFORD: No, they're not on the way out, they're just too strong of an industry. They do provide some utility if they're properly done. I think one of the greatest difficulties that we have is that we don't look at things enough on the plan level. We tend to look at things more at the individual manager level. The measurement really ought to come in at the plan level. Let's consider the way most performance measurement is done today. The people providing these services are usually not schooled on the liability side; they really don't understand what the whole game is about. Most of them are not schooled on the investment side because they haven't actually had to manage assets. Most of them have never been plan sponsors. Other than that, most of the people who are doing the work are perfectly well qualified! A huge leap has been made in the late 1960s and early 1970s in this area. Some incremental things have been done since, however, there's a huge way to go to make performance measurement services relevant.

MR. LOFGREN: Roger, what do you think of tactical asset allocation, which has been getting a lot of press lately, as a new strategy?

MR. BRANSFORD: Strategic asset allocation is really what we have talked about here today. This involves looking at the liabilities and needs of the plan over a

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longer period of time, (longer is defined here as more than a couple of years). There is a desire to have some sort of apparatus which addresses needs in the shorter period. Tactical asset allocation tools do this.

There are several classes of tactical asset allocators. You need to discriminate between the people who have done this with actual money under management and those who have only used theoretical based models. The tactical asset allocator is looking at the shorter term and is willing to make some decisions about the goodness or badness of stocks and bonds. There are a couple people who I think are pretty good at doing this.

MR. JEREMY GOLD: I would like to comment on tactical asset allocation and strategic asset allocation and suggest a more strategic framework in which to look at them.

When you start doing asset/liability studies, you discover that you have time frame problems. Are you trying to manage something for three years or 30? One of the things that happens with any strategy that you select, say 60%/40%, is that you don't stay there forever. The market migrates, some judgments are made, and you end up at 65%/35%. The question is, what do you do next? If you've been thinking of your liabilities as long bonds, the general effect of having equities outperform bonds is that the net asset in the plan increases. Conversely, the general effect of bonds outperforming equity is a decrease in the plan's net asset. You are, after equity has risen relative to bonds, wealthier than you were before. What are you going to do about it? Tactical asset allocation has the following behavior in general: after equities go up and you are richer, you buy more bonds and sell those equities. One would think that you would have an increased capacity for risk if you are richer, yet your process is to down risk. The more general framework for evaluating such strategies is to ask the question, "is your wealth and risk being correlated positively or negatively?" Tactical asset allocation negatively correlates wealth and risk. Some plan sponsors may feel that that's completely appropriate and others may not. That is the framework.