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## CURRENT TRENDS IN THE INVESTMENT OF PENSION ASSETS

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The investment of pension assets has become more diversified and systematic in recent years. Emerging trends and developments include:

1. International investments.
2. Real estate investments.
3. Mutual funds (U.S.) or pooled funds (Canada).
4. Options.
5. Modern portfolio theory.

The session will emphasize how these new developments are coordinated within the structure of the total pension fund portfolio.

MR. GARY A. PINES: Pension funds now total over one-half trillion dollars on their rapid way to the trillion dollar mark. As pension funds get larger and larger, so does their impact on the financial operations of sponsoring entities. This means that a variation of just 1% on the rate of return of pension assets can have a significant effect on the bottom line of an organization's profit or loss statement.

Because of this you might think that most pension officers would be conservative in their pension investing: that they would not want to take much risk; that they would not want to invest much in equities. WRONG! In fact, we now appear to be back into the "go-go" era of the 60's, but this time supposedly with more foresight.

Pension officers appear to be looking for more risk because they feel they can now handle it better than during the uncertain 1970's. They also appear to be looking for more creative methods of investing which will produce better returns with less risk.

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In addition, pension officers are now realizing that their risk posture ought to better coordinate with what the actuarial or liability side of the structure is telling them. For instance, is the plan a young virile plan that can afford the risk of losing money? Or is it a mature plan with a lot of retirees that cannot afford a poor investment return?

We are fortunate to have a blue ribbon panel with us today to discuss these current investment trends. We have two money managers, Bob Kirby and Lloyd McAdams, and one pension investment consultant, Lou Kingsland.

Bob will discuss the recent popularity of mutual funds as a very effective pension investment. Lloyd will discuss some creative investment vehicles such as financial futures and covered call options. And Lou will comment on the integration of these trends, which concern asset strategy, with the liability side of the pension plan.

MR. ROBERT G. KIRBY: Probably few of you realize how inhibiting the term actuary is to an average mortal human being. I ought to confess that one of the reasons I went to Stanford was because I was a creative writing major and Wallace Stegner, the novelist, was on the faculty there. I later discovered you couldn't earn a living as a creative writer, and somehow I got into this line of endeavor.

I thought we might examine some of the reasons mutual funds seem to be getting much wider application in a variety of retirement funds. With your indulgence I'd like to strike the word mutual funds from the discussion. Mutual funds relate to a rather specific part of the market, and I would really rather use the term commingled investment vehicles. Admittedly at this point in time, most commingled vehicles are mutual funds but I don't believe this will continue to be true.

We can acknowledge a couple of basic truths in the record of pension fund management over the past 10 or 15 years. First, professional money managers, whether through commingled vehicles or whether through the direct management of pension and profit sharing funds, have not produced a result superior to that of the market. It is widely accepted in academic circles that this fact proves efficient market theory, which states that indeed everything intelligent people know is mostly reflected in a given security at a given point in time. Therefore there's no point in going through the exercise of research, judgment and laborious stock picking trying to beat the market.

If you stop to think about it, though, it is no more significant to say investment managers haven't beaten the market than it is to say baseball players don't know how to play baseball. If you consider all the activity in the major leagues, just as many games are lost as are won; if they knew anything about baseball obviously that wouldn't be true. If you consider professional money managers as a group which represents the universe of which we are a part, we can't in the aggregate beat ourselves. The significant thing is whether you usually finish on top, like the Dodgers and the Yankees, or on the bottom, like Cleveland and Chicago. I hope Cleveland or Chicago is not your favorite team.

The aggregate performance of all money managers of all portfolios is going to be the market less transaction costs. Let's call the market the S&P 500

Index for a moment. An investor who does not think he can organize a team of superior managers is probably better off with a passive portfolio than he is an active portfolio.

One of the things to focus on is the fact that this whole business, as it exists today, has been around for a very short period of time, yet the numbers are mind boggling. Right now there is close to \$500 billion dollars each in public and private pension funds. By 1984 and 1985, even if the securities market doesn't move up, those figures will almost double. There will be almost a trillion dollars in each of those pools.

Yet the business as we know it today really began its development in the very late 1960's. In fact, the first major company I can remember to do what everybody in the world has done since -- leave the trust department of a big New York bank who had taken sole responsibility for that company's pension fund since time began -- was good old Betty Crocker: General Mills. They did that in 1967. We were into the 1970's before this whole thing developed any real momentum. Thus the idea of splitting your pension fund among 3 or 10 or 15 managers, each managing smaller pieces with specific sorts of objectives, is really barely 10 years old. As in anything that represents such a dramatic change from past procedures, it developed with a fair amount of chaos in the process.

The initial people who did it, like General Mills, and who picked imaginative, innovative, aggressive managers, had the market of the late 1960's which was a speculator's Valhalla. The environment was one where the more risk you took the greater your returns became. As is true of all of us in the investment management business, we rapidly forget when we're lucky and begin to think we're smart. As the early 70's came, corporate pension funds who had departed from those big New York banks were invested far more aggressively than it makes any sense for corporate pension funds to be invested. Things then hit the fan in the early 1970's, causing not only enormous turnovers of portfolios but big turnovers of portfolio managers. Thus in the first half dozen years of this movement from 1965 to 1981 there was tremendous volatility and incredible transaction costs. It's not particularly surprising to me that most professionally managed corporate pension funds have underperformed the market.

Let's look at one other reason that underperformance is fact, not fiction. We pointed to the incredible turnover costs because portfolios were moved to money managers who completely turned over the portfolio to make it more imaginative, innovative and aggressive. Then those managers got fired and were replaced by other managers.

The meeting between the client and the portfolio manager is an important performance inhibitor in this kind of relationship. Typically, if Capital Guardian Trust or Putnam or any of the investment managers out there is hired, a guy named Smith or Jones is assigned to the portfolio. He becomes the portfolio manager and meets quarterly or semi-annually with the client.

But the fact is he meets with him too often, and meets with the wrong guy. The agenda of that meeting always has as item no. 1 the three w's list, the "what went wrong" list. The client looks at the five stocks in the portfolio which have the most adverse relationship between cost and market, then asks the money manager how he could have been such an idiot as to buy Firestone at 32 when it now sells at 7 1/2. That's not conducive to good,

thoughtful, long term decision making on the part of the money manager. It is particularly counterproductive if the person the client is talking to is the fellow who made that foolish decision, which is normally the case.

This is a business where candor is rare. My associate, Mike Shanahan, the President of the company, was talking to a prospect about six months ago. They had pretty much decided to employ us and the client asked, "Well, how often do you think we ought to have performance review meetings?" After a brief pause, Mike got a sly smile on his face and said, "Do you want to know the truth?" The client said, "Of course". Mike then answered, "Well, we believe every review session costs you one half of one percent in annual performance. You decide how many meetings you want." There is a strong element of truth in this.

One of the reasons, I think, that commingled vehicles have better aggregate performances than directly managed portfolios is that the individual who makes the investment decisions never, ever sees the person for whom he is managing money. The process of having a client come in every three months and repeatedly ask "How could you buy Firestone at 32 when its 7 1/2?" is essentially a negative process. What most portfolio managers are likely to do after three meetings is sell Firestone rather than go through the agony of explaining their stupidity. On the other hand, with commingled funds the client can focus on the things that really matter: the bottom line. He can focus upon whether or not the fund is doing what its prospectus language says it is supposed to do. One or two percent is my wild guess at quantifying the performance advantage of that posture over the traditional one of beating your portfolio manager about the head and shoulders at quarterly intervals.

The traditional client/portfolio manager relationship has negatives beyond this three w list. For example, a few months ago I had a meeting with a client and the corporate pension fund administrator. The administrator began asking me an unusual number of questions about Smith-Kline. This happened to be the "wwr" or "what went right" stock, rather than wrong. I finally said, "Joe, why are you so interested in Smith-Kline?" He explained that the President of the company receives the transactions of the portfolio. The administrator had called me when we bought Smith-Kline and asked what I was thinking. I gave him a rather strong pitch. The president had called him to ask about the stock because he was interested in purchasing it. The stock suddenly went up three fold and now is a very important personal holding for him. So, now the president is involved, in addition to the S&P 500, the George Russel Co. and 1,000 other people. If I decide to sell 1/3 of the Smith-Kline portfolio, what is the president going to do? What are the risks if he sells all of his holdings and the stock doubles again? Without making it too complicated, let me say that these sorts of things don't help performance results over time.

I think there's some awareness of this risk on the part of the sponsors, and this is one reason that mutual funds have become, much to my surprise, as widely used as they are today. I checked with our sister company in the mutual fund business managing about a dozen mutual funds. They said that in 1980 over half of their mutual fund sales were to institutions. That amounts to over half of about \$400 million, and consequently it amounts to a very important market.

Furthermore, most corporate sponsors belong to associations of 15 to 20 companies. They compare their results, and compare the results of directly managed portfolios with mutual funds. Many of them say there's good evidence that mutual funds have been doing better. There's a realization that using commingled funds allows the company to focus on the things that are really important, and to avoid concentrating on individual common stocks which I see as being only destructive and counter-productive over time.

As we have seen it, mutual funds seem to be used in retirement funds in two ways. First, there has been a growing trend on the part of the sponsor to put money in a particular part of the market. In other words, he's become more of an orchestra leader. He decides that basic industry, or yield stocks, or emerging growth stocks, or whatever, are an attractive place in the market at a particular point in time. With a mutual fund he can shoot right at the bullseye and buy that part of the market without buying any other. To my knowledge, there are still very few investment managers who will put a \$20 million portfolio in a narrow slice of the market. Perhaps we feel it's a violation of our civil rights; but I know we're reluctant to do that, and I think so are most of our competitors. Mutual funds give you the opportunity to invest money where you want: junk bonds, long term bonds, growth stocks or whatever it may be. We see a lot of our sales going to people who want international stocks or some other special area; and these are fairly big companies investing \$5 or \$10 million a year.

Second, companies can use groups of mutual funds to achieve the investment mix they desire. With 12 or 13 alternatives, they have broad flexibility in the capital allocation process. Once the retirement fund is invested this way, the pension fund committee can concentrate solely on two things. One, the capital allocation process. Should there be 20% in long term bonds, 10% in a cash fund, 30% in international and 40% in income stocks? Two, they can focus on the bottom line -- the overall results. The temptation is not there to live and die by the S&P 500 stock index, which by the way is not representative of the market.

The S&P 500 is a portfolio arbitrarily assembled by some guys in a back room at McGraw Hill & Co and is changed from time to time in a rather capricious way. While we might all use it to measure investment performance, it is really an irrelevant piece of nonsense. If I were teaching a class in portfolio management and a student submitted that as his portfolio I'd flunk him in 5 minutes. The first 6 stocks represent 16% of the weight of the index, and the last 16% of the weight of the index represents the last 200 stocks. It is way over-weighted in oils; it has many peculiarities, but it is not a portfolio.

On the other hand, an index like the Wilshire 5,000 represents everything out there. The Wilshire Index is not a portfolio put together by some guys at McGraw Hill. It is put together by God, or whoever runs Wilshire Associates. Most importantly, it is put there by economic selection. It simply represents the 5,000 largest companies out there, and just the first 1,000 of the Wilshire 5,000 represents 86% or 87% of everything in the market. If you look at the weightings of that portfolio you will see that it is decidedly different from the S&P 500.

Where mutual funds are the investment vehicle, and specific portfolios are selected that work in specific segments of the market, it is not appropriate to compare them to the S&P 500. You know that the small growth stock fund

is not going to act like the S&P 500. Neither will the energy fund, or the international fund. The focus is on measuring performance in terms of what other money managers are doing with their portfolios. This, to me, is a far more relevant measure than the S&P 500. Is the return a 16% compound rate on a 5 year time horizon in a world where long term interest rates are 11% or 12%? Is there an adequate risk premium for running a stock portfolio rather than a bond portfolio?

I can't emphasize enough how important it is for the client or the corporate sponsor to focus on the things that are really important. Is their capital in the right kinds of vehicles? Are they changing them properly as the external world changes? Are the managers of those individual vehicles doing what they said they were going to do? Are they really investing in small growth stocks? And finally, is the overall result what it was supposed to be?

One of the things that all portfolio managers have to live and die with, whether they like it or not, is that this business is sort of like a baseball player's batting average, or a politician's votes. If you can bat .320, you sign a contract for \$15 million. If you're a politician who can get two other guys to run who get 45% of the vote, you get to be President. In managing a portfolio a lot of your decisions are going to be wrong. I wouldn't be surprised if most successful portfolio managers have over half their selections performing under the market. Good portfolios are often made of a few real bonzai winners on 10% of the bell curve, and a lot of blahs. Portfolio managers are guys who make an incredible amount of mistakes. When a client notices that his manager bought Firestone at \$35 and the stock went down to 7, he asks how could anyone with an IQ over 50 have done something like that. The answer is that it seemed like a good idea at the time. Managers do not intentionally buy stocks that go down. They buy them because they believe that they're going to go up.

Those things affect a client's confidence in his money manager. You can say over and over again that this is a batting average business. I'm going to pick a certain number of turkeys and a certain percentage of those will be really bomb turkeys. Still, when it happens, the client just walks away shaking his head. The kind of an environment offered by a mutual fund, or any commingled vehicle, is needed. The client is one step removed from the guy who makes the investment decisions. The communication about what the fund is trying to do, where it's going, and what its results have been is the responsibility of a communicator rather than a portfolio manager.

MR. PINES: Our second speaker is Lloyd McAdams. Lloyd is president of Security Pacific Managers, a company which manages only pension fund assets. Lloyd was previously Senior Vice President of Trust Company of the West. Lloyd graduated from Stanford with a degree in statistics and could have been an actuary but decided on another route. Lloyd will tell us about creative investment vehicles.

MR. LLOYD McADAMS: The reason creative investment vehicles have come to the fore is very specific. I expect that understanding why creative investing even exists is of more interest to you as actuaries than the details of these particular vehicles. To me, the 'why' is much more important than what is actually going on. Even though not everybody will get involved in creative investing any time soon, the 'why' affects everyone.

What are the creative investment techniques that are now being talked about? Most evolved from what we would call the pernicious effects of inflation. Inflation has put an end to many types of investment vehicles as appropriately suited to pension funds. The returns did not live up to the expectations. People realized that inflation was the problem, and attempted to find investment vehicles which would solve this problem of inflation. There is talk about putting gold in portfolios; there is talk about using financial futures in portfolios; there is talk about using options in portfolios. Real estate is becoming prominent.

It is true we have problems with inflation. However, what we really have a problem with is bonds. Bonds do not hold up well in an inflationary environment. A plan sponsor may draw a wise and sage conclusion that high inflation will be with us forever. Often his opinion reflects that of his corporate financial officer and long term planner. The corporate financial officer may forecast financial affairs for the next 10 years with an assumption of a 10% inflation rate. The actuary may think that inflation will only be 8%. The chief financial planner has said plan on 10% for the next 10 years and structure the company to survive in a 10% inflationary environment. In that situation, if bonds are mentioned the likely response is "We don't want bonds, we have problems with bonds."

During 1974-75 and 1970-71, when there were great rallies in the bond market and prices were appreciating, many managers found that their clients were very receptive to buying bonds once the price appreciation was visible. But the third time will not be a charm, and most people have decided that even if there is a big bond rally in 1981-82 they are not going to be a part of it. Investors want to solve their problem in other ways.

The problem seems, then, to be inflation, which manifests itself through bonds. The real problem, however, is that the risk in bonds is too high -- much too high. Risk is simply defined by us as volatility. Recall that bonds were originally put into pension fund portfolios to reduce risk. The bond contractual agreement returns your \$1,000 in 2012 and pays 6 1/2% while you wait. This seemed to solve all the problems in a very perfect world where inflation stayed at 4 1/2%. But those bonds that were put into portfolios now sell for about 59¢ on the dollar -- give or take \$5 depending on what the market did yesterday.

That is the type of volatility in bonds today. Bonds are fluctuating all over. Pension fund officers expect their actuaries to account for this. Every time I describe your job I step very quickly into very deep water. When you examine the spread between investment returns and wage assumptions, for the last 5 years you will see that wage assumptions have been too low and investment assumptions have been too high. The main reason the investment assumption has been too high has nothing to do with the stock market and has everything to do with the bond market. Funds that are 30 to 50% in bonds or higher (and if it is higher it's a disaster), have not produced the type of investment returns that are needed to maintain the funding level given the increases in wages that have occurred in the last 3 to 5 years. Then, in that environment, bonds are too risky. There has to be a solution.

One solution may be to tell your bond manager not to buy anything with a maturity of more than five years. This was the first easy solution until the 14 3/8 of 1985 came out a year ago. These were government bonds that yielded 14 3/8, and were felt would solve a lot of problems. Bonds rallied,

meaning prices of bonds went up and interest rates went down. These bonds sold for 121 within 60 days. 21% appreciation while you collected a 14% yield in 60 days. If you annualized that it wouldn't be too bad. The only problem was that 90 days later the bond was back down to par. That kind of fluctuation was not what people were expecting in 5 year government bonds. The solution, then, must be something besides bonds. Enter creative investing.

You will see that the two particular types of creative investing I will discuss aren't being done for the lark of it. Nor is it done for the sake of doing something innovative and creative. This is being done to solve a very major problem. The bond is not producing the way it was supposed to produce. It does not reduce risk, nor does it increase the incremental return in a pension fund portfolio.

Two major vehicles that have attracted some interest are financial futures and options. Both of them do only one thing -- they reduce risk. Financial futures currently are no different from pork belly contracts. They are contracts to take delivery of financial instruments. A \$1 million government bond together with a \$1 million treasury bill provides hedging protection in the same way soy bean farmers in Iowa hedge crops. Farmers plant 500 acres, and simultaneously write nine contracts against those 500 acres, locking in the price of 4,500 bushels. The financial futures market is a method of owning a bond portfolio and locking in a fixed rate of return.

Many of the conditions of the guaranteed insurance contracts (GIC) were not quite what some people thought. One major insurance company in the last two months opened the window to liquidate a GIC and was given a request to liquidate \$300 million. They had to close the window. It was a bank holiday at that particular insurance company for three weeks. There are problems out there with things that seem to be too very simple. The GIC had its time, its place, and will probably come back when the bond market improves. But the financial futures market offers liquidity and an opportunity for the money manager to reduce risk.

I do not see financial futures as playing a meaningful role in pension funds anytime soon, because they do not provide a method to produce an incremental rate of return. Financial futures lock in a fixed rate of return. I can lock in a fixed rate of return with a treasury bill just as easily. So financial futures, do not, in my opinion, have much of a future with pension funds.

The options market is completely different, and is where there will be many things happening. I have an example of one portfolio with which I have worked and where the particular client was very satisfied with the results. The clients were inflationists. They expected a 10% rate of inflation. They knew there was something wrong with the bond market, but they thought they could make short term profits in the bond market if they were in and out. The client thought that perhaps every 3 year period there might be a 12 month window in which they should own bonds. The remaining time they would hold no bonds in the portfolio. This theory led to the inevitable conclusion that they would probably wind up 100% in stocks. But 1974 was still too vivid in their memory, and they said "No, there's no way we'll put 100% in stocks. The market may go down 35% and we may miss the market. We can't afford to be down 35% -- that's just as bad as the bond market."



We designed an alternative investment strategy. Keep 60% of the portfolio, as always had been kept, in the stock market. Use the other 40% when you see that 12 month window in the bond market. Buy bonds, but then sell them. Suddenly, the attitude developed that bonds are trading vehicles.

Bonds, once the cornerstone of every portfolio, now became first-in first-out and stocks became the cornerstone of the portfolio in the inflationary world.

What about the 40% of the portfolio during the other 2 out of every 3 years? They wanted something low risk that had some protection against inflation. They concluded that a program which utilized options was probably the most appropriate. This fund would buy some stocks and sell deep in money calls. Without going into detail, a combined portfolio of options and stocks can create a portfolio that has the volatility characteristics of what the bond market used to have. Not what it is today, but what it used to be.

If you took standard deviations of historical rates of return, you would find that the standard deviation of stock rates of return are between 18 and 22%, annualized. Standard deviations of historical (pre-1975) rates of return in bond portfolios, are between 4 to 6% per year. In the last five years, instead of bonds having standard deviations of approximately 1/3 to 1/4 of stocks, the standard deviation of bond returns have been a little more than 1/2 that of stock returns. Given the risk/reward relationship of owning stocks, there is no justification for owning bonds at this excessive risk level.

With options and stocks you can accomplish two things. First, underlying stocks is a supposed inflation protection. Second, the options can be written so that they reduce the volatility of the combined portfolio.

The 40% of the 1975 portfolio of my particular client was put into a portfolio that owned the very best common stocks we could find. These were the very same stocks that were in the other 60% of the portfolio. We then wrote options in a way that produced standard deviations of returns on the combined portfolio similar to what the pre-1975 bond market would have provided on 40% of the portfolio. That solved the problem. We got the risk characteristic of the portfolio where the client wanted it. This particular portfolio, which had volatility characteristics like the historical bond market, went up 18%. The stock market admittedly was up 32% last year, but the bond market was a loser. This portfolio was supposed to have low volatility, but it actually outperformed the bond market by 18%. That is the type of incremental rate of return that the options market can provide pension fund sponsors.

Another innovative thing that investors are doing with options is buying calls. It sounds very speculative, but as it turns out it is probably the most conservative thing that can be done. A call is the option to purchase stock at a specific price before a specific expiration date inherent within each contract. They are standardized contracts that are traded on national securities exchanges.

And you may say, "Gee, buying calls. I know all about that." For those of you who dabble with your own portfolios you know that it is the easiest way to purchase a lot of stock and take a big ride. If you happen to buy

options on Kennicott Copper, you may make a lot of money. You may also wind up with the federal grand jury looking at you because the price rose from \$3 to \$30 in one day.

Buying calls sounds awfully speculative because you can lose all of your money. Not just part of it; you lose 100% of it if the stock goes down. Consider this strategy. Put 10% of the portfolio in long calls, put 90% of the portfolio in treasury bills. Six months later what do you have? The long call will probably cost you about the interest that you will have earned on your treasury bills for 6 months. Take my word for it. What you're going to have left in 6 months is your money back and no interest. But you will have your money back.

What is the volatility characteristic of owning a long call? It is about 10 times that of the market. For every dollar the market goes up, the call goes up 10. For those of you who are big on quantitative methods, the beta of most call options is 10 -- 10.0 as opposed to 1.1 or .95. With that type of participation, if the market goes up you will have market participation. If the market goes down, you're even. Many people view that as a very attractive alternative to the bond market.

If you encounter a plan sponsor who wants to talk about options, it is nice to know something about them. But what he is really talking about is risk. He is talking about his dissatisfaction with the bond market. He is talking about his dissatisfaction with the rate of return. He is going to ask if there isn't some way to do this better.

We keep counting on bonds paying off. We keep counting on bonds being worth something when they do pay off. Will the money be worth less or worthless? Either way you want to read it, there is a good chance for the inflationary environment to create either of the conclusions. And that is what I see happening -- there is a problem in the bond market. Innovative, creative financing of plan assets, making investments, owning rolling stock, getting involved in real estate, options or whatever, all exist because the bond market has let us down.

MR. PINES: If I recall three years ago and even prior to that, there was frequent talk about having part of the portfolio in a conservative investment. Lloyd described this wonderful world that used to exist with bonds. You could always say "Well, I want 50% of my portfolio in a conservative investment. I'll put it in bonds." We can't say that anymore. Both Bob and Lloyd talked about what they thought would be more conservative investments. My question is this: If a plan sponsor came to you with their total portfolio and said he wanted to have 50% of his dollars in a conservative investment, what would you say? Before we could recommend bonds, what might we say now? What is a conservative level?

MR. KIRBY: In the endless years I've been in this business I have always been surprised at people's definition of risk, which never met my definition of risk. They always refer to volatility. Modern portfolio theorists may think volatility is a decent surrogate for risk. Volatility has amplitudes both ways. To me, risk is just the down side -- the possibility that the security or company you buy may go out of business. Yet risk has mostly focused on everything except what has really been the major risk of the last 25 or 30 years. That risk is inflation. It has been only recently that bonds are considered riskier than stocks. But it has always been

true. I think you can add so many ornaments on the Christmas tree, that you can't see the tree anymore. The basic rule that owners are better rewarded than lenders, is about as fundamental as anything can be. If it isn't true, then we can expect a new kind of government and economic system. The definition of risk relates to the quality of the asset you own. I do not believe any of us would argue with the fact that General Motors is less risky than Chrysler. No matter what the beta coefficients are, Chrysler has more risk than GM. A shopping center in Orange County is less risky than one in Buffalo, or Syracuse. My definition of a conservative portfolio really relates to the prospect that the enterprise you are investing in might go out of business, or that the piece of real estate you own may diminish in its ability to produce wealth.

MR. McADAMS: I think that the emphasis on the equity market is probably basic, and in a way, I agree with what Bob has said. A problem in many portfolios is that the funding requirements are such that the amplitude of a greater return is simply not needed because it is a mature plan. In such portfolios you generally want to dampen the volatility. Since bonds do not particularly work, a cash oriented portfolio, or some of the more exotic systems might be better.

I would like to mention one concept concerning the options market which I may have neglected. The options market does nothing by itself. The key to being a great options portfolio manager is knowing where the stock will be on expiration date. That is all you have to know. If you know what will happen to the stock, you have the options market licked. The perception of the fundamental value, and the basic nature of the stock, must be well in hand. It is the key to being a good options manager. Options are just methods of owning a little piece of General Motors which do not fluctuate quite as much as traditional holdings of General Motors. In that sense, an options manager is basically an equity manager with a little less fluctuation in returns.

MR. KIRBY: I would like to add one more thought on the general area of risk and the confusion the world has had in defining and dealing with it. I have often used what I call the "Man to Mars" analogy. It clarifies the thing absolutely and simply to me. The analogy is this: if I took anybody in this room, or any group of investors anywhere, and said, "You have been selected to do the deep space probe to Mars and you will not be back for 50 years. How would you like me to invest your portfolio?"

There wouldn't be any cash funds. There wouldn't be any bonds. There wouldn't be any fixed income securities. You would have no confusion as to what the least risk would be. You would put it in the highest quality equity properties on a diversified basis that you could find. Then you would go to Mars with your fingers crossed. But I doubt that you would be confused by how to deploy your assets. We all know what the risk is on a 50 year time horizon. The problem is that we are hired and fired by clients on a one year time horizon. This tends to confuse our judgment.

MR. PINES: What we have all said is that there certainly has been a new ball game in the last few years. It is not easy to say you are making a conservative investment. You really have to examine it.

Our third speaker is Lou Kingsland. Lou is a Vice President with Wilshire Associates, and is responsible for the pension planning and allocation

activities of Wilshire. He received his masters degree from Cal Tech., and has been consulting in the investment finance area for over 10 years. Since becoming Vice President of Wilshire, Lou has been active in providing liability projection and asset allocation services to a large number of investment managers and pension plan sponsors. Lou will discuss the integration of current pension investment trends with an asset strategy designed from liability projections, which is an area very familiar to most of us.

MR. LOUIS KINGSLAND: I will be using some charts, but before I do I'd like to make a few general comments about the discussion leading up to the alternatives in investment vehicles. Most of the people who are professionals in managing assets over the past decade are aware that there is a great tendency in this business to make decisions by looking in the rear view mirror. I think some of the investment managers feel a lot like Columbus trying to steer his ship across the Atlantic, while the crew runs from one side of the boat to the other. This produces nothing but sloshing a lot of water on the decks.

Many plan sponsors are becoming aware of the fact that they need to become involved in the overall strategy of their pension plan. Their actuaries are also becoming involved in decisions concerning where the plan is strategically headed, and what investment policy should be employed to achieve the long term goals of the plan.

Most plan sponsors appreciate the fact that their plan is a financial aspect of their company. A friend of mine at General Motors said that whenever his associates pressure him bureaucratically, he threatens to use the assets of the plan to buy controlling interest in the company and fire them. A fact of life in the pension business is that the assets of many large corporate pension plans are very substantial relative to the net worth of the company.

Plan sponsors are taking another look at what their pension plan means to them. Many sponsors view their pension plans in the same way that another friend of mine describes his boat. He has owned it for a few years. The initial blush of newness has worn off. He says, "Do you know what a boat is? A boat is a hole in the water that you throw money into."

In many respects, a plan sponsor sees his pension plan as a hole in his corporate water into which he throws money. It is not a profit center. It is not an area that will provide funds. It is an area that requires funds, and requires an obligation of the corporate dollar. In order to come to grips with what is happening with his pension plan, plan sponsors and investment managers follow a process of the type I will outline.

Given the viewpoint that I just described, investment managers and plan sponsors are coming to realize that one of the primary objectives of investment strategy is to control the ultimate cost of the plan to the plan sponsor. By that I mean, to minimize the ultimate cost of the pension plan to the plan sponsor without exposing the plan to the risk of excessively high ultimate costs.

By ultimate cost, I simply mean the present value of all future pension costs. I know you are saying to yourself "Well, that would be just great if I could figure out how to do it." It is a difficult enough task to do that just on a one year valuation basis. But, I think there are ways to estimate what the ultimate costs are.

It is worth understanding, and a lot of you are probably aware of this, that there is a difference between what control you have as an actuary over the plan's ultimate cost, and what effect the investment manager has on the ultimate cost of the pension plan. By using various actuarial assumptions and funding methods, the actuary can delay or accelerate the rate at which money goes into a pension plan. But, the actuary can do nothing through the valuation process to reduce, or alter the ultimate cost of the pension plan. The pension plan is a pool of money that is eventually going to have to be paid out on a scheduled basis to beneficiary recipients. There is really nothing you can do to change the ultimate cost of the plan. You can change the rate at which the money will go in, but, those dimes and nickels are eventually all going to be paid out.

However, the investment process can significantly affect the ultimate cost. If investment returns are favorable, the investment manager will have helped the sponsor fund the plan by reducing the required level of contributions. If investment results do not fulfill expectations, the sponsor will be required to increase his contributions to fund the losses.

Each dime of investment return delivered over and above the expected level of return is a dime that the sponsor will never have to put in the pension plan. Each dime that falls short, is a dime that will have to be provided from the pocket of the plan sponsor. The actuary is not going to contribute that money. The actuary is there just to referee this ball game. The actuary cannot contribute, or take away from the cost of the plan. He can only control the rate of play in this game.

At this stage of our discussion, I want to mention the topic of the investment planning horizon. The investment planning horizon is the time period over which an investment strategy is expected to be appropriate. In the case of the man going to Mars, the investment planning horizon is 50 years. He does not have to worry about anything in the interim.

In the real life pension plan sponsor's office, you're dealing with career decisions concerning the investment manager and also the pension officer himself. Whether they are going to be fired, continue in their roles, or promoted are decisions typically made over a three to five year period. The decisions will be based upon his performance in that three to five year period, and upon the degree to which he has gotten the plan into trouble in that three to five year period. If he has gotten the plan in trouble, things are not going to be so great for him. This, then, is the realistic investment planning horizon. Although it might be a good idea to perform frontal lobotomies on corporate treasurers and other senior executives of these companies, there is no near term likelihood that the process will change.

There are some reasons for this. Over a three to five year period the total investment structure can be totally overhauled. In three to five years, there might be 100% turnover among the key players involved. And in three to five years, there might be totally new investment vehicles that weren't even dreamed of at the beginning of that time period. There might be a totally new outlook, such as there has been in the last five years on bonds, that might cause you to totally revamp your viewpoint concerning what is good and what is not so good.

We find plan sponsors working with an investment planning horizon that is not the duration of the payout of benefits over a time period which lasts until the expiration of the last man presently in the plan. It is, in real life, shorter.

If you accept that premise, it becomes possible to look at the ultimate cost as being the sum of two pieces. One element is pension costs up to the planning horizon. Money that will be contributed to the plan over the investment planning horizon. This is fairly easy to project. Projection models can be used to determine what might happen in the marketplace; or to estimate how bad things might get, or how good things might become. A range of possible costs can then be developed over that planning horizon.

The second element is the cost of the pension plan beyond that planning horizon. We still have not solved that problem. How do you feel knowing infinity is out there past the horizon point? But you actuaries have, in your very valuation process, a very nice surrogate, or very nice representative of those costs beyond the horizon.

How do we determine the ultimate cost? The cost of the first piece is simply the present value of pension costs over that three to five year period, up to the planning horizon. This can be projected. The cost of the second piece is the present value of the projected unfunded liabilities (the unfunded present value of future benefits), remaining at the planning horizon.

In other words, you can now place in one common frame of reference, or on one dimension, a single financial parameter which can be used in planning how much the plan will eventually cost the sponsor. The first part established how much the plan sponsor must contribute up to a point in time where a complete reshuffle of the investment strategy is possible. The second piece estimates how much of the bag he is going to be left holding at the end of that time.

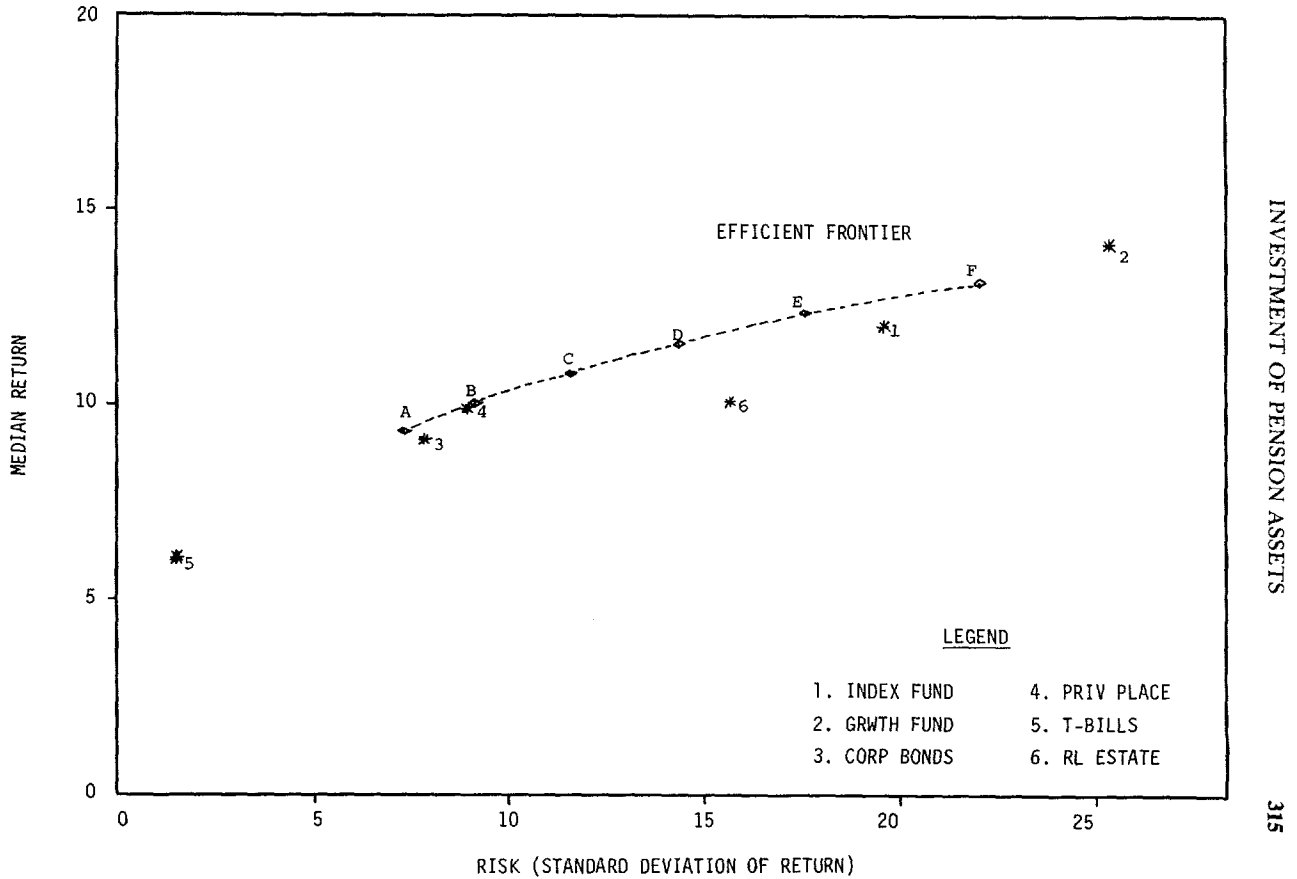
On a present value basis, the sum of those two pieces is the ultimate cost of the plan as constituted through that investment planning horizon. Admittedly, it doesn't include people who will come into the plan beyond the horizon; nor does it include benefits that may be granted beyond that point. But it does capture a relative measure of what the plan might cost the sponsor. It allows him to go to the next step, which is to use this kind of a measure to evaluate the investment policy.

Let me step away from the liability side for a moment, and discuss Chart I. The vertical scale on the left is the median return for potential assets that might be held in the plan. The horizontal scale, reading from left to right, is risk; or, the standard deviation in the annual rate of return in the investment alternatives. On this chart are plotted about a half dozen investment alternatives. The more conservative ones are on the left hand side, the more aggressive ones are on the right hand side. They include things like an index fund, growth fund, corporate bonds, private placement bonds, treasury bills and real estate.

You could put in any number of possible alternatives, but this is a representative cross section of possible investments. The dotted line represents the range of possible asset mix alternatives that are available to the plan sponsor given his holding restraints. For example, he can't

CHART I

OPTIMAL ASSET MIX ALTERNATIVES



INVESTMENT OF PENSION ASSETS

realistically hold a plan that is 100% in treasury bills; or, he doesn't want to ever be more than 50% in common stocks; or, he always wants to hold at least 20% in corporate bonds. For whatever reasons, within those realistic limitations, this is the range of alternatives that are available to him.

At the left hand end of that dotted line is the most conservative option. It has a moderately low rate of return, but has a fairly low degree of annual volatility, or risk. At the right most end of that line is the most aggressive option. It has a fair amount of money in common stocks; a very modest amount in more conservative investments. It has a fairly high return, but also has a fairly substantial amount of risk. How does a plan sponsor evaluate where he should be in this spectrum?

There are simple minded examples to make that determination. For example, I'm aware of a plan that has to do with a group of nuns who are either mostly retired or very senior and about to retire in the next few years. They have considerable assets in their plan. There is no doubt that their assets are going to be sufficient to pay off the liabilities. In that situation, there is really nothing to be gained by being very aggressive. In fact, if they are in a comfortably funded position, they should really lock that position up as much as possible, perhaps with an insured contract. Basically, they ought to forget about the liabilities and just ride it out. It is reasonably clear that that plan should be in a fairly conservative position. It does not take much analysis to determine that.

Let's take another example. Consider a brash young company in Sunnydale, just formed in the last three years and building micro-electronics. Their plan has nobody who is even vested; nobody in the plan who is over 40 years of age; and nobody in the plan who is going to be retiring for the next 20 years. They have a fairly long term situation on their hands. They don't have to worry about near term cash flows. They don't have substantial assets today, but, they have no vested liabilities either. You would intuitively feel that that plan ought to be fairly aggressive. It should be able to withstand a fair amount of uncertainty, risk and volatility in the market in order to realize a long term return. They are close to the position of that man going to Mars, who can afford to wait until he gets back in 50 years to find out what happened.

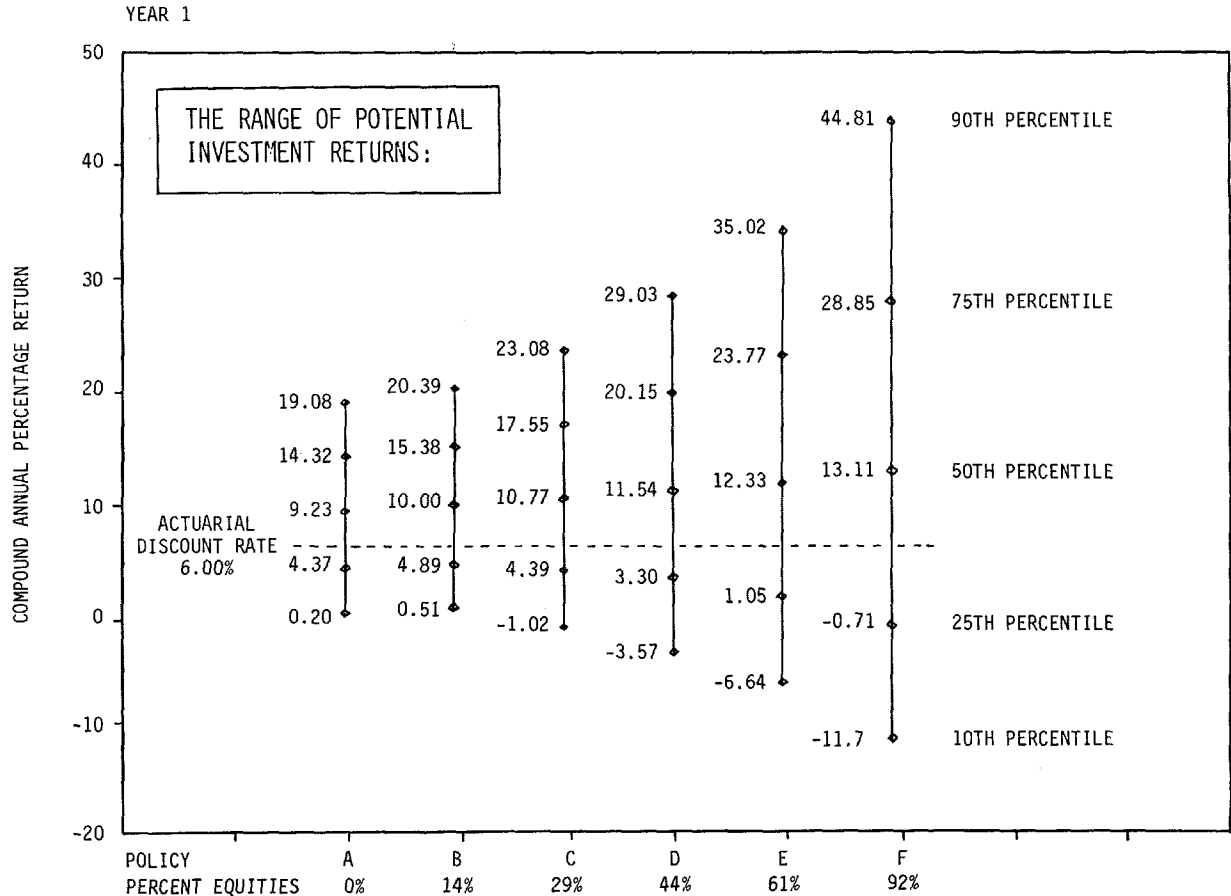
The problem is that most plans are somewhere in between. There is a large spectrum of possibilities. In our experience, we have found that about 20% of the plans out there need to be substantially more conservative than the average plan. About 20% of the plans out there need to be substantially more aggressive. How is that determined?

The investment alternatives indicated on Chart I were six points which represented asset mixes. The same alternative mixes are shown at the bottom of Chart II and are labeled A, B, C, D, E and F. The vertical scale represents the range of compound returns that might result from being invested in any one of those asset mixes.

For example, the left most line represents Policy A. The bottom of that line is the one out of ten worst case returns for any one year given Policy A. It is effectively zero. The best case return in any one year, given Policy A, is about 19%. Recall that Policy A has no equities; and has a large amount in fixed income; a moderate amount in real estate; and a fair amount in treasury bills and other more solid securities.



CHART II



ABC CORPORATION HOURLY PLAN

The right most side of that chart is the most aggressive policy, Policy F. Policy F has 92% in equities. The one out of 10 worst case possibility of returns in any one year, could be about -12% for Policy F. The one out of 10 best case year could produce returns as high as 44 or 45%. These are realistic numbers for the volatility of the stock market. There is a wide range of possibilities between.

The 50th percentile, or median numbers, are the points in the middle of the diagram. This quantifies the range of alternatives available to a plan sponsor. Still it does not narrow down the question of where his plans should be in that spectrum.

This brings me to one of the points I'd like to make. In evaluating this kind of information, we find more and more plan sponsors looking at these tradeoffs, not in terms of pure investment returns as Chart II depicted, but more often in terms of dollars in the plan. Pension investment objectives must be evaluated in dollars, not in investment return, because pension financial tradeoffs are measured in the same dimension as the corporate financial statement. The dollar measures of these tradeoffs are: the unfunded liabilities of their plan, the assets of their plan relative to their vested liabilities, the funding requirements and the cash flows. This is the frame of reference which is familiar to the corporate decision maker. He is accustomed to making his decisions with a dollar reference. He does not want to make decisions for his pension plan any differently than he makes decisions about committing capital to a new plant in the Midwest.

Chart III is somewhat of a plumbing diagram. Basically, it outlines the kind of projection technique that we and a number of other people follow. We examine the liability side of the plan (portrayed on the left) and the investment side of the plan (portrayed on the right). We look ahead to what might happen in the future to both dimensions. We combine the liability and asset side in a model, using the actuarial valuation process. We determine the funding requirements, which in turn determines the cash flows which feed both the benefit side and the asset side. This process is repeated year after year, just as it is in a real pension plan. We look at what will happen to the numbers given the range of things that could happen with the liability side; given benefit increases; given inflation on the asset side; and given favorable or unfavorable investment performance.

Chart IV is similar to the investment return chart (II) discussed earlier. It has the same basic layout, except the vertical dimension is millions of dollars of annual cost. The horizontal dimension depicts the same six investment strategies, from 0 to 92% in equities. Chart four is an actual case study for a specific company. The plan is an hourly pension plan that has union type benefits (hourly benefits). It is not very well funded. It has a lot of future cost to anticipate, and it is funding at a very high percentage of pay. The time period considered is one in which the plan will probably have to grant cost of living increases for retired members. In other words, the plan has real problems on its hands. Trouble looms ahead in light of the fact that it is not digging itself out of its financial hole as fast as it should. It must accommodate a good deal of future growth. The ultimate cost numbers, calculated in the way I mentioned before, given the prior ranges of return, are shown on the chart, the bad news (high costs) is at the top. The low costs are at the bottom.



DISTRIBUTION OF ULTIMATE COST

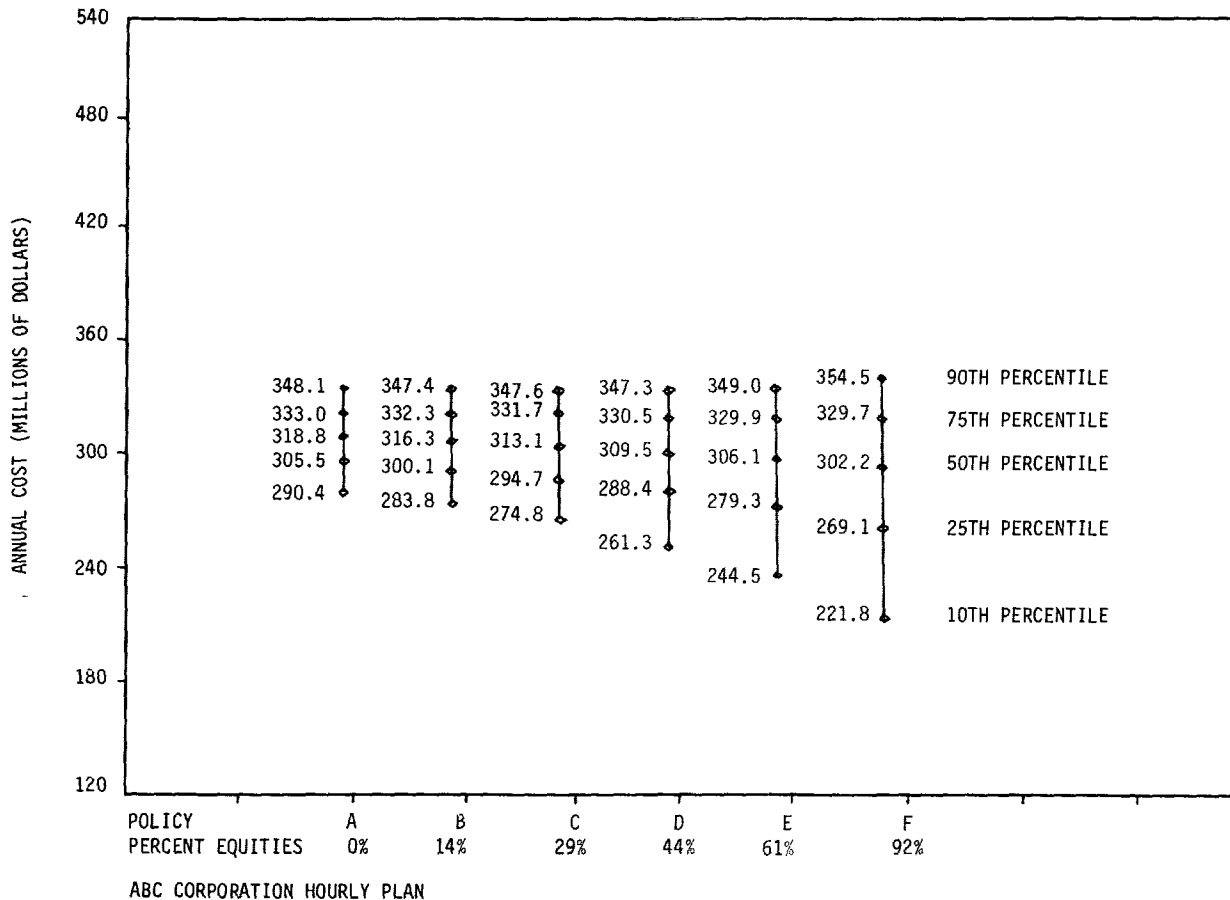
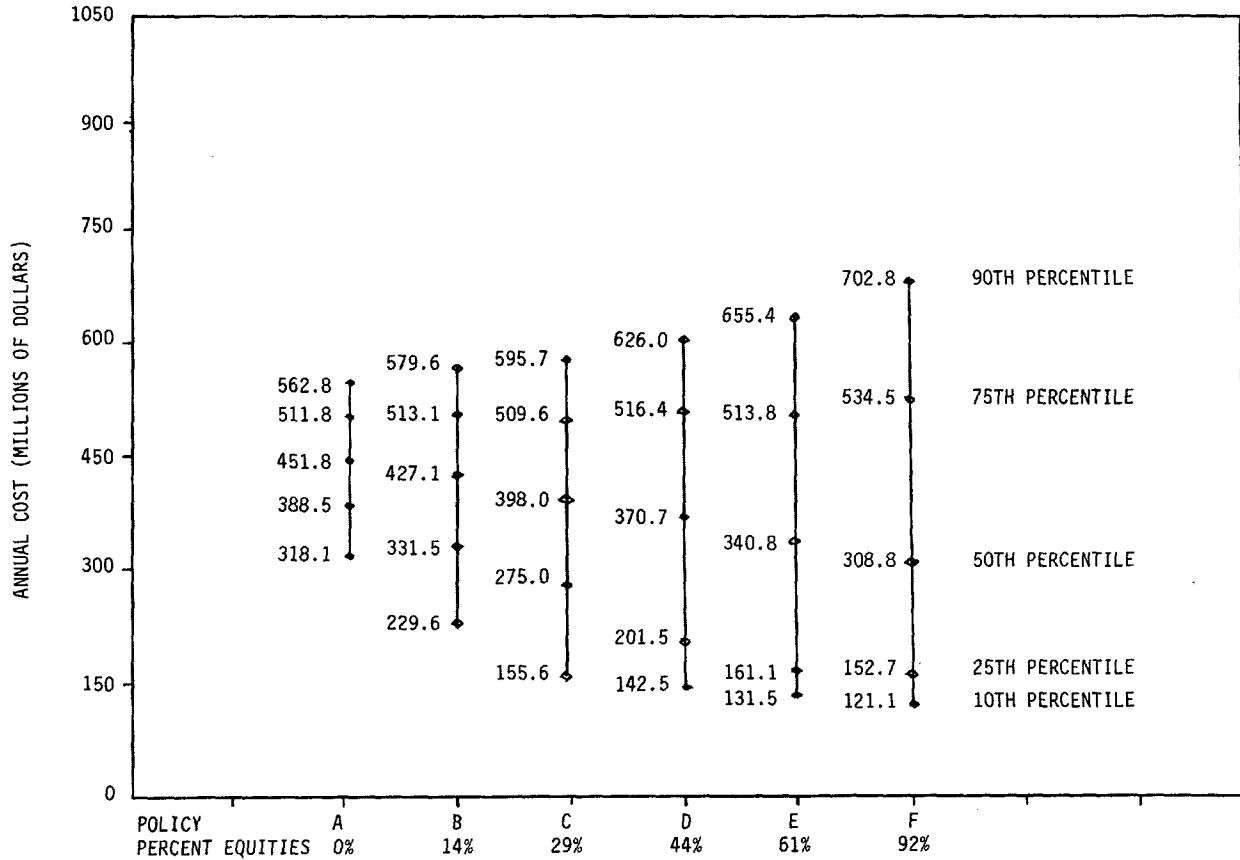


CHART V

DISTRIBUTION OF ULTIMATE COST



In the best case, there is a fair amount of improvement as the investment strategy becomes more aggressive. Basically these assessments are a dollar for dollar risk/reward analysis. Determining whether each dollar of reward costs more or less than a dollar of risk. After going through that process for this plan, it turns out that this plan should be about 60% in equities. It should be in a fairly aggressive position based on its fundamental financial characteristics.

Chart V depicts the same information, with exactly the same six investment policies and exactly the same market outlook. Chart five is a case study for a large salaried plan. This salaried plan has assets that are sufficient to cover its vested liabilities. It is not fully funded by any means, but it has a fair number of assets relative to its vested liabilities. It is a pay related plan, so that there is not a big lump of unvalued benefit increases ahead of us, as was the case for the hourly plan. The plan is fairly mature in terms of work force growth.

Intuitively, you would feel that this plan might want to be a little bit more conservative. It is refreshing and reassuring, to some extent, to see that the numbers confirm that intuition. We did a dollar for dollar risk analysis (depicted from right to left). We determined what each additional dollar of reward, on average, costs in terms of a dollar of risk. If things went poorly, the conclusion was that this plan should probably be about 30% in equities.

These two cases are illustrations of the differences that can result from applying one consistent analysis to two moderately different pension plans. These were not the extremes of the black and white spectrum I talked about earlier -- the group of nuns or the young company in Sunnydale. These are, let's say, a 25th percentile case and a 75th percentile case, on a spectrum of conservative to aggressive. The case studies illustrate the point that the fundamental investment strategy, and risk exposure of a pension plan should be determined by examining not only the investment information, but also the liability information and funding structure of the pension plan.

Key factors (with respect to the liability side) that determine the asset mix decision are things such as the maturity of the plan, coverage of liabilities, range of potential costs, and cash flow considerations. Maturity of the plan involves the degree of future growth expected, or the degree to which the plan is a closed group, such as the nuns I mentioned. Coverage of liabilities involves the degree to which assets cover or do not cover liabilities. The range of potential costs is important and so is the willingness of the plan sponsor to absorb that range of potential costs. If the plan sponsor doesn't care what his potential costs may be, he may be willing to ride the roller coaster for 50 years to gain a long term payoff from equities. If he is concerned that he could be thrown out of the roller coaster career-wise, because the costs have begun to skyrocket, he may have a totally different viewpoint.

Bob mentioned the example of Betty Crocker in the late 60's. One of the officers of our company was in the pension office at General Mills during that period. There was a great deal of euphoria about the behavior of the stock market. In fact, in the late 60's the people at General Mills went very heavily into aggressive stocks. I don't recall the exact numbers, but they went way out on a limb in terms of exposure to these aggressive growth stock portfolios. When the bad news started to come in in the early 70's,

there was much blood letting at the pension office. There was much wringing of hands and gnashing of teeth. A reaction to this was the characteristic driving by looking in the rear view mirror. Suddenly bonds looked a lot better. Then people went heavily into bonds, and now bonds don't look so great.

It is like a loose cannon on a deck -- you don't know which way it's going to go next. The idea is to try to get the situation under control. You must understand the risks that you might incur both in the equity market, the bond market, the option market, real estate or whatever; and, then determine whether your risks and rewards are within tolerable bounds. You may not be able to control the future, but you may be able to understand what the future holds. You can make decisions today which ensure your potential, as much as possible, to absorb the future shocks.

Let me summarize my major points. The investment strategy should be concerned with what a plan will ultimately cost the plan sponsor. The investment planning horizon should be considered. Are you dealing with a man who's going to Mars? Or are you dealing with a market timer? Market timers run in each year with a new investment policy or investment strategy. Stocks are up, bonds are down. Bonds are up, stocks are down. Or, does the sponsor have some intermediate investment planning horizon?

Finally, the expected rewards should be balanced against the expected risk. That is the way most business decisions are made. Decisions concerning the commitment of capital for a new plant or facility are based upon how much it will cost versus how much it will return. Pension investment decisions need to be made in the same way.

MR. PAUL J. McCONNELL: Mr. Kingsland, in developing the present values of contributions used to determine your ultimate cost, what sort of a discount rate do you use? Do you use the company's cost of capital? Or do you use the same discount rate they use to evaluate other decisions?

MR. KINGSLAND: We find it's probably least controversial to use a standard discount rate such as the actuarial rate of return. The present value of the liabilities at the end of the time horizon are calculated using the actuarial rate of return. You could, of course, recalculate the liabilities and present values using another rate of return. But the point is to determine the relative cost of these alternatives. The absolute values are not as important as the relative behavior of the costs between alternatives. I think the easiest rate to use, and the least controversial, is the actuarial rate. It causes less difficulty.

MR. MARTIN A. DENMAN: In recent years there has been a trend for pension funds to invest in real estate. Do you feel that due to the high transaction costs and lack of liquidity, that real estate is a legitimate and appropriate pension investment?

MR. KIRBY: I really think real estate is long overdue as an important portion of any retirement plan with long term objectives. It has some characteristics that make it difficult to handle. The components are usually pretty big. If you are dealing with small components, usually your competition is a syndicate of high bracket dentists who are not making an investment decision, but trying to create a tax shelter. I am quite surprised that what has happened in the past five years didn't happen

long ago. This is like the rear view mirror analogy. People went into index funds not to reduce transaction costs. They did it at the end of the three year period, when the S&P had beaten everyone else. People are going into real estate now because for the past 5 or 10 years it has been one of the most productive asset categories. But I think real estate makes sense as a major investment category for most retirement funds. It indeed will continue to grow substantially through the balance of this century.

MR. DENMAN: You are saying then, that in a certain selective situation, depending on the cash flow requirements, it might be an appropriate investment for certain funds.

MR. KIRBY: No. I am saying it is appropriate on a very broad basis for most pension funds, probably most endowment funds, and for most foundations. You will probably see that almost every company in the Fortune 500 will have 5, 10 or 15% of its portfolio invested in real estate by the mid 1980's.

MR. KINGSLAND: I contend that the main concern here is the concern for liquidity. For instance, the pension plan consisting of a group of nuns for whom benefits will be paid out over the next decade, would not be in a position to benefit from the possible rewards of a real estate investment. A plan that has a longer term pay out, that doesn't need the near term liquidity, could probably do quite nicely with real estate as a piece of the portfolio.

MR. ANTHONY C. DEUTSCH: For nearly all pension plans, except perhaps the group of nuns, or the rare situation where an employer is contemplating discontinuing his operation, it seems to me that pension investment strategy is a long term process. The risk characteristics are long term in nature. The concerns of the investment manager's career, and the short term horizons should not be the focus. Do you think it would be worthwhile to educate the plan sponsor regarding this point?

MR. KINGSLAND: A comment was made earlier about a plan trying to bail out of a GIC when the window opened. That indicates the kind of tides that can occur in this area. Investors run back and forth from one side of the boat to the other. Four or five years ago, people looked at those guaranteed investment contracts as a be all and end all for some situations. They may have even had the point of view that they were going to go to Mars. That they would look at it again in 50 years, but not in the interim. But these people are sitting here on earth experiencing the ups and downs that real life investment experience is exposing them to. There is absolutely no way they are going to stand still and wait for that 50 year time period. They just know, or they feel they know, that in the three to five years which have elapsed since they bought the investment contract, there are extremely more attractive alternatives available. They believe these alternatives warrant liquidating the guaranteed investment contract.

MR. DEUTSCH: Well, isn't that just pressing the panic button? If we accept Mr. Kirby's opinion that without doubt, over the long haul we should be into the ownership of solid equities, shouldn't we basically be doing that? Shouldn't our investment horizon be long term?

MR. McADAMS: When I was the investment officer of the State of Tennessee I was responsible for managing the state's pension fund. It had one billion dollars in assets. It was really my first money management job. I went to



New York to see the actuary, after I had done some reading in preparation for our meeting. With bright eyes I looked at the actuary and said "Given all the actuarial assumptions, how should I be managing this money?" His answer was "Make as much as you can, as fast as you can." He said that this is a long term proposition, but you're in the hole. I have always remembered that as the basic solution to making money. You are experiencing right now, in a sense, the frustration that everybody who is a money manager experiences. The pressure comes back. To understand this pressure, take a close look at the money management business.

We work in a business that is not regulated the way the pension business is. If you have a \$5,000 bond, you can set up shop as a money manager. There are many money managers out there who are extraordinarily good at selling something, but very few have the skills to manage money. But even a good money manager can only present his views. He cannot say, "You have to have a 50 year time horizon, or I'm not going to manage your money." If he does, he will be out of business.

MR. KIRBY: One of the problems is the pressure for performance on the part of the people who manage investments. In Japan they don't care if earnings are down next quarter or flat next year. They make 5, 10 year time horizon decisions. Our managers are under great pressure from us wonderful professional investors to have earnings up 12% every quarter, year after year. The people who run companies have the same attitude toward their own pension funds.

If you are in charge of the corporate pension fund for McDonald's, you realize the mission of the company is to make hamburgers. The guy on top may have passed through the pension fund department, but he wanted to stay there as short a time as possible and get on with his God-given mission of making hamburgers. Every corporate pension fund administrator, if he is at all human, wants to make a big splash in two or three years. He wants out of there and on toward being the top guy. This pressure for quick performance, on the part of everybody, pervades the business.

MR. PINES: Ideally I think it would be very nice if we could educate plan sponsors and companies on what they should do. But we are living in an era of uncertainty. An uncertainty caused by inflation. When dealing with companies, pension plan sponsors, and managers, it pervades the whole arena. Because of inflation, nobody knows which way to run. The only way to run, it seems, is to have a one year, three year, or possibly a five year horizon.

I'd like to ask one final question of Lou Kingsland. With the integration of the liability and the asset strategy planning that you go through, how often do you review this with the client? Is it reviewed every year, every three years? Is the planning dated?

MR. KINGSLAND: Typically there's a large agonizing appraisal about every three to five years. The data I gave you on the investment planning horizon was empirical data. It is not a theoretical calculation on what I think it ought to be. There are yearly refreshers which consider what has happened lately, and how it affects the moderately long term outlook. Occasionally there will be quarterly, minor decisions concerning what to do with the cash flow. Primarily, it is more in tune with the investment planning horizon that I mentioned.

