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PENSION INVESTMENTS

Moderator: IRWIN T. VANDERHOOF. Panelists: JAMES A. ATTWOOD, ROBERT G. KIRBY, HANS C. MAUTNER**, MEYER MELNIKOFF*

1. Dedicated portfolios
   a. Industry or client dedication
   b. Retired lives
   c. Segmented general account

2. Policy for defined benefit plans

3. Real estate - the perfect, or imperfect, investment

4. Immunization - Report on the Ashland Conference on Duration

5. Foreign investments

MR. IRWIN T. VANDERHOOF: Our first speaker is Jim Attwood, known to most of you for his work on many committees, and his membership on the Board of Governors. He is the highest ranking investment officer among the members of the Society of Actuaries. He is the Chief Investment Officer and Executive Vice President of the Equitable Life Assurance Society.

MR. JAMES A. ATTWOOD: The first part of my remarks will be general, and will be of interest to all pension actuaries. The second part will be of more interest to insurance company actuaries, both pension and non-pension, because I will talk about the segmentation of the general account, which has broader application than just the pension business.

Inflation, volatile financial markets and high interest rates pose many problems to pension fund managers. In essence, there are three parties who might be asked to withstand the impact of inflation. If nothing special is done to recognize inflation and we operate the plan's benefits independent of inflation's eroding effect, we, in effect, pass the burden to plan participants.

On the other hand, if the employer designs benefits to adjust to inflation and does nothing else, the employer's liabilities increase and his increasing costs bear the brunt of inflation.

But, there is a third alternative for coping with the impact of inflation on pension plans, if not fully, at least partially, and that is the investment of plan assets. This presents the major challenge for pension investment managers today - how to manage plan assets to obtain consistently a positive and real rate of return in the face of continuing inflation.

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** Mr. Mautner, not a menber of the Society, is President of Corporate Property Investors.

In addressing this challenge, an investment manager needs first to understand the pension plan's liabilities -- the expected amounts and expected timing of future payments to plan participants, as well as the extent to which such amounts and timing may vary from expected -- and then to structure the plan's assets to accommodate an investment policy and investment strategy most appropriate to meet the needs and liabilities of the plan.

My task this morning is to discuss some of the ways in which an investment manager, particularly an insurance company investment manager, can structure and dedicate its investment portfolios to accommodate the specific needs of pension clients having differing liability characteristics and different investment objectives.

First, let me discuss general portfolio dedication practices to accommodate the investment needs of pension clients independent of the investment manager. These generally fall into two types: dedication by industry or type of investment, and dedication to the needs of a specific customer (such as his retired life roll). For insurance companies, such portfolio dedication - both types - is accommodated through separate accounts or advisory account relationships.

Dedication of insurance company assets by type of investment can be traced back to the early 1960's when pooled separate accounts were first authorized to permit insurance companies to accommodate pension clients wishing to invest in common stock. Starting with pooled common stock separate accounts, the concept was expanded to include pooled separate accounts dedicated to publicly traded bonds, direct placement securities, real estate, and short-term paper. The concept was further refined by the introduction of series of pooled closed-end portfolios of direct placement securities open to contributions for a specified period with all income and principal payments paid out as the investments mature. Other refinements included balanced funds composed of publicly traded bonds and common stock as well as some short-term paper.

Now the concept of dedication by type of investment is being extended to focus on particular industries or particular types of investment. Examples are pooled separate accounts dedicated to special growth common stocks, specific types of real estate (e.g. new properties, developmental, or debt/equity), common stocks of natural resources or energy companies, bonds with maturities up to one year in length, intermediate term bonds, longer term bonds, or bonds whose maturities will be varied according to the interest rate cycle.

We'll hear more about such specific investments from our other panelists - so let me turn now to the second general type of portfolio dedication. Dedication of assets to the needs of a specific pension client is a rather traditional exercise which might include any combination of types and durations of investments that comport with the investment needs of the specific client.

One particular type of such dedication that is receiving increased attention by insurance companies recently is the structuring and dedicating of an investment portfolio to meet expected payments to a closed block of retired employees. Using computer programs designed for the purpose, a portfolio composed of high quality publicly traded bonds is constructed to meet the expected cash flow for those benefits without need for future reinvestment. The portfolios can even be adjusted from time to time to recognize actual variations of cash flow from expected. The purpose is to assure the pension client a dependable high rate of return combined with a high degree of certainty in meeting the liabilities without the risk of market loss on liquidation or loss of investment income from reinvestment.

Although most of my references up to this point have been to insurance companies and their separate account and advisory account services, portfolio dedication of the two general types mentioned are equally applicable to pension funds managed by other investment managers.

But now I'd like to turn to a specific insurance company topic - the traditional insurance company investment vehicle, the general account. Twenty years ago, nearly all pension assets held by insurance companies were invested in the companies' general accounts, pooled with assets supporting life and health insurance, individual annuities and other insurance company products. With the advent of separate accounts and other separately managed portfolios, only a fraction of the total pension assets managed by insurance companies remains in general accounts -- but an important fraction for most companies. In particular, reserves for guaranteed fixed benefit annuities must remain in the general account; assets supporting guaranteed interest contracts are most often held in the general account; and there are still substantial blocks of unallocated active life pension assets without interest guarantees that are invested in insurance company general accounts.

Before 1961, insurance companies were required under New York law to use portfolio interest rates for allocating investment income among lines of insurance, and to individual client funds within the pension line of business.

In 1961, New York's Regulation 33 was modified to permit allocation of investment income and capital gains and losses using an investment year method. Under the traditional form of investment year method, as under the portfolio method, each general account investment is shared by each line of business, and by each general account pension client. Under the investment year method the shares are determined based on the distribution by line of business, or by client, of total funds made available for investment in the year the investment was acquired. Such funds include cash flow, investment income and capital gains and losses, and principal repayments from existing investments. Such principal repayments are allocated to the line using the same investment year allocation percentages as for allocating investment income. The investment year method is more complicated to administer than the portfolio method, but provides a much fairer recognition of the investment earnings actually generated by assets derived from each of the company's different lines of business and individual pension clients.

Recently, the Equitable conducted a thorough examination of the liability structures of its various general account businesses and noted the very different investment needs of the different product lines -- e.g. pension guaranteed interest contracts and non-participating annuities which require a very high degree of matching of assets and liabilities; pension IPG and similar products without interest guarantees and permitting withdrawals only subject to market value adjustments, which require dependable high rates of investment return with little concern over duration; individual life insurance with its cash values and policy loan provisions and the continuing threat of disintermediation; individual annuities with cash values requiring a high degree of asset liquidity; group life and health insurance with its seasonal and highly volatile fluctuations in cash flow. Our senior management concluded that some way must be found to tailor the general account investments made, held, and sold more specifically to the needs of the respective lines of business. Also, some way must be found to dedicate the investment income, capital gains and losses, and repayments from specific investments to specific product lines.

We then considered various possible alternatives. One solution would have been to restructure the company so as to operate the different classes of business in separate companies. Another would move certain lines of business to subsidiaries. Still another would make more extensive use of separate accounts. (Equitable was already operating a portion of its pension interest guarantee business in a separate account.)

After analyzing the various alternatives, we finally chose an approach which we believe to be most appropriate for the Equitable, given its particular financial management structure and mix of business -- which may or may not be the right solution for another company with different corporate structure, liabilities, financial management and available management information. We settled upon a modification of the investment year method, which we have described as segmentation of the general account.

Briefly, Equitable's segmentation entails a structuring of our general account into five business segments, each with its own portfolio of investments. New investments are acquired for each of the five segment portfolios from the actual cash flow of that business segment in accordance with a separately defined investment strategy tailored to the specific investment needs of that segment's business. A particular investment may be acquired for a single segment, or may be shared by two or more segments. Initially, existing investments are shared among business segments, with percentage shares derived from current investment year method allocations. The larger direct placement, mortgage and real estate investments generally are shared. Certain classes of smaller or publicly traded investments have actually been distributed or subdivided among the respective segment portfolios.

In addition to the five business segments, we also established a corporate segment to accommodate those investments that are held within the general account in accordance with overall corporate objectives, which may not comport with the specific investment needs of any individual business segment. Examples of such investments are: home office properties, certain subsidiaries, certain long term venture capital or growth type investments, or investments acquired for corporate social responsibility purposes.

Equitable's segmentation of general account assets does not constitute a segregation of assets. All assets continue to be owned by the general account as a whole and stand behind all obligations of the general account. Segmentation affects only the allocation of investment results; it does not allocate assets. Segmentation does not require any changes in statutory accounting, except for the allocation of investment results by line of business, and need not involve any change in methods of allocation of expenses or taxes among lines.

Segmentation has required major and costly changes in Equitable's management accounting systems to assure timely and accurate monitoring of cash flow for each of the business segments, including a prompt allocation of investment results by segment when received, rather than once a year as required under the traditional investment year method.

More important, perhaps, segmentation has required a complete reorganization of our general account investment portfolio management to permit close coordination with the product managers of the respective business segments in identifying the liability characteristics and investment needs of each class of business and in developing an investment strategy most appropriate to the needs of the businesses. While the separate portfolios are tailored to the needs of the respective segments, there still remains an overriding need for overall coordination at the Chief Investment Officer level to assure that consistent policies are adopted for all general account segments as to capital gains, statutory investment limitations, and overall structure of general account assets.

An important consideration in the development of our segmentation plan was the need for detailed rules and procedures for allocating specific investments to specific segments, or for sharing investments among two or more segments, to assure fair treatment of all lines of business and all classes of policyholders. This was of particular concern to the New York Insurance Department in their review of Equitable's proposed segmentation plan.

Another important consideration was the need for rules and procedures to accommodate negative cash flow in one or more business segments.

Equitable's general account segmentation became effective January 1, 1981, and although implementation has presented its share of headaches, we have every reason to be satisfied with its operation. Product managers are gaining a better understanding of the investments supporting their products and are better able to anticipate the characteristics of new investments acquired for their respective businesses. Investment managers are gaining a better understanding of liability characteristics and investment needs of the respective lines of business and are better equipped to serve the client's needs. From a corporate financial standpoint, segmentation offers the opportunity for tighter monitoring and control of cash flow, and a better matching of general account assets and liabilities thereby improving the company's overall risk posture. In summary, we are very pleased with the results so far.

In conclusion, insurance companies have moved a long way in the last twenty years toward recognizing the peculiar investment needs of their pension clients and toward structuring insurance company products and investments to meet those needs. Dedication of assets, whether it be dedication by line of business in the general account, or dedication by type of investment, or dedication to the needs of a specific client, is clearly an inportant contribution to this progress.

MR. VANDERHOOF: Our second speaker, Meyer Melnikoff, is known to you all not only for his contributions to the Society, but also because he is a Senior Vice President of the Prudential, and the godfather of PRISA (Property Investment Separate Account).

MR. MEYER MELNIKOFF: I'd like to take this opportunity to urge all the younger actuaries to learn about investment matters. Even if you have no investment responsibility, at least make sure that you understand what the investment people are doing, and try to influence them.

My comments will be confined primarily to the pension area, and I'd like to pick up the thread of one of the comments that Jim Attwood made earlier, and that is the significance of the investment policy for carrying out the objectives of the pension plan. Since we're talking about defined benefit plans, we should begin by looking at the benefit objectives of pension plans. Such objectives are easily expressed in terms of the desired relationship between the pension income, and wages generally in the period immediately preceeding retirement. In many companies that are more forward looking on this subject, the idea of maintaining that pension income at a fixed relationship to current wages for the position from which an individual retired is becoming more accepted. This idea is fairly widespread in some foreign countries, such as England. For a pension plan to provide adequate benefits without reaching exorbitant levels of contributions, an investment policy and investment performance are required that can maintain the adequacy, in real terms, of the assets that have accumulated. For this purpose, I think it's helpful to gain a little perspective from the past. It may not be a predictor of the future, but if you neglect the lessons of the recent past, I think you may be apt to repeat the mistakes.

The period to be shown here will start with July 31, 1970, which coincides with the time at which PRISA (Property Investment Separate Account) was established, and therefore is the longest period for which there is a recorded history of property investments. Chart 1 shows the effect of the Consumer Price Index, expressed in terms of the investment results over the period if you could have invested in something that provided a return exactly equal to the movements of the Consumer Price Index. Chart 1 also shows what happened to average hourly wages. They did not quite keep up with the Consumer Price Index. Looking at the effect of investing in short term investments, it may be surprising to many of you to know that they would not have kept up with inflation. The explanation is very simple. In most of this period, the short term (Treasury Bill) yield was always set at a level that reflected previous inflation, so it always fell behind actual inflation. Chart 1 also shows the investment results of long term bonds according to the Salomon Brothers Index, and common stocks according to Standard and Poor's 500, and finally property in accordance with the experience of PRISA. For an investment of $1,000 on July 31, 1970, the accumulation at the end of the nearly eleven year period which ended June 30, 1981, was $2,325 for the CPI, $2,253 for the Average Hourly Wage Index, $2,103 for Treasury Bills, $1,711 for the Salomon Brothers Index, $2,639 for the Standard & Poor 500, and $3,469 for property. This is a traditional way of looking at investments (namely a single investment at the beginning of the period), but it's really not the most appropriate for a pension plan. So now, let me shift to effective annual rates of return arising from a series of equal quarterly investments. Chart 2

CHART 1

RESULTS OF A SINGLE INVESTMENT OF $1,000 ON JULY 31, 1970 EXPRESSED IN DOLLARS OF CURRENT VALUE

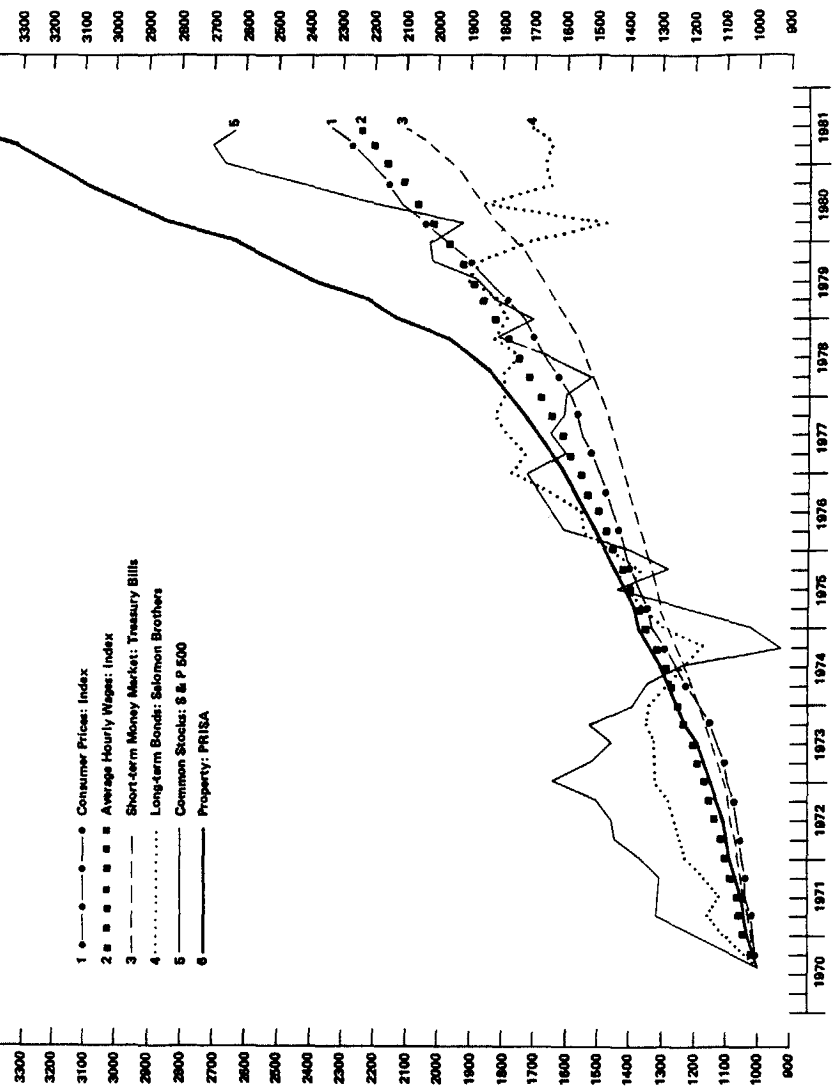
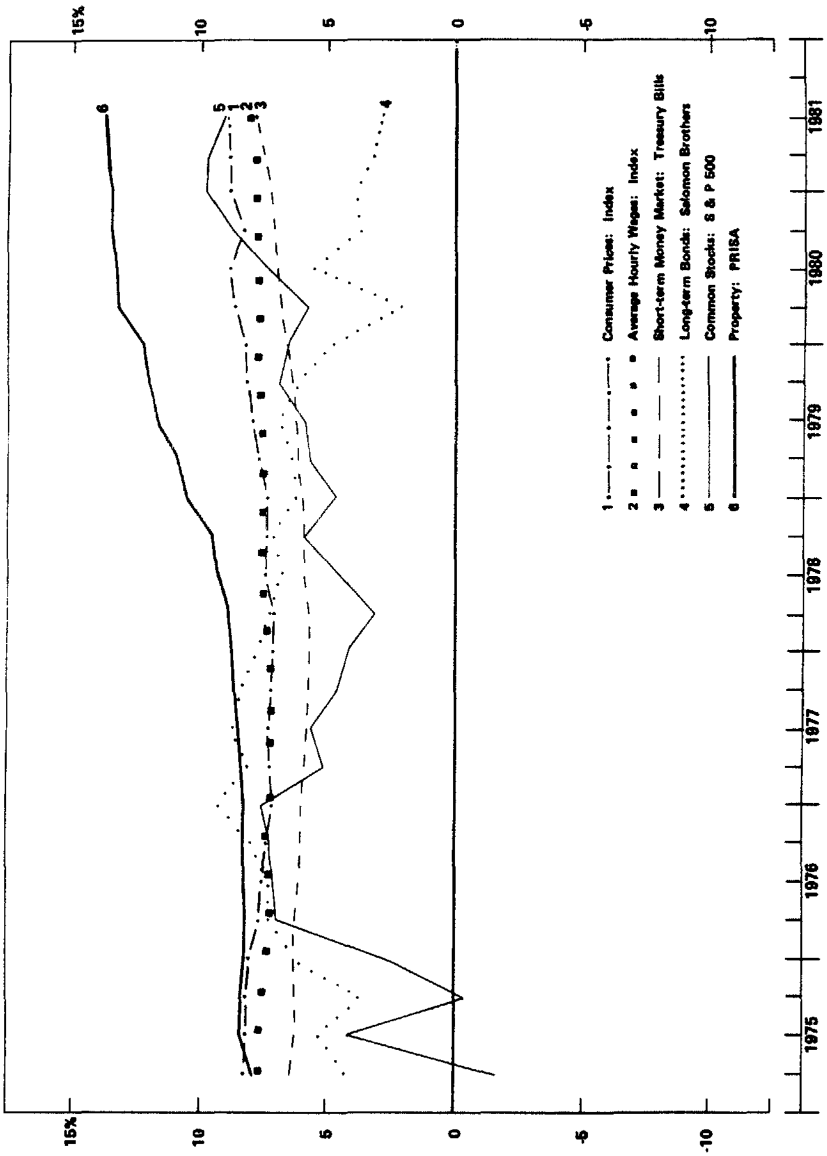


CHART 2

EFFECTIVE ANNUAL RATES OF TOTAL INVESTMENT RETURN
ARISING FROM QUARTERLY INVESTMENTS OF $1,000 EACH
MEASURED FROM RESULTS IN DOLLARS OF CURRENT VALUE



COMPARATIVE INVESTMENT PERFORMANCE ANALYSIS

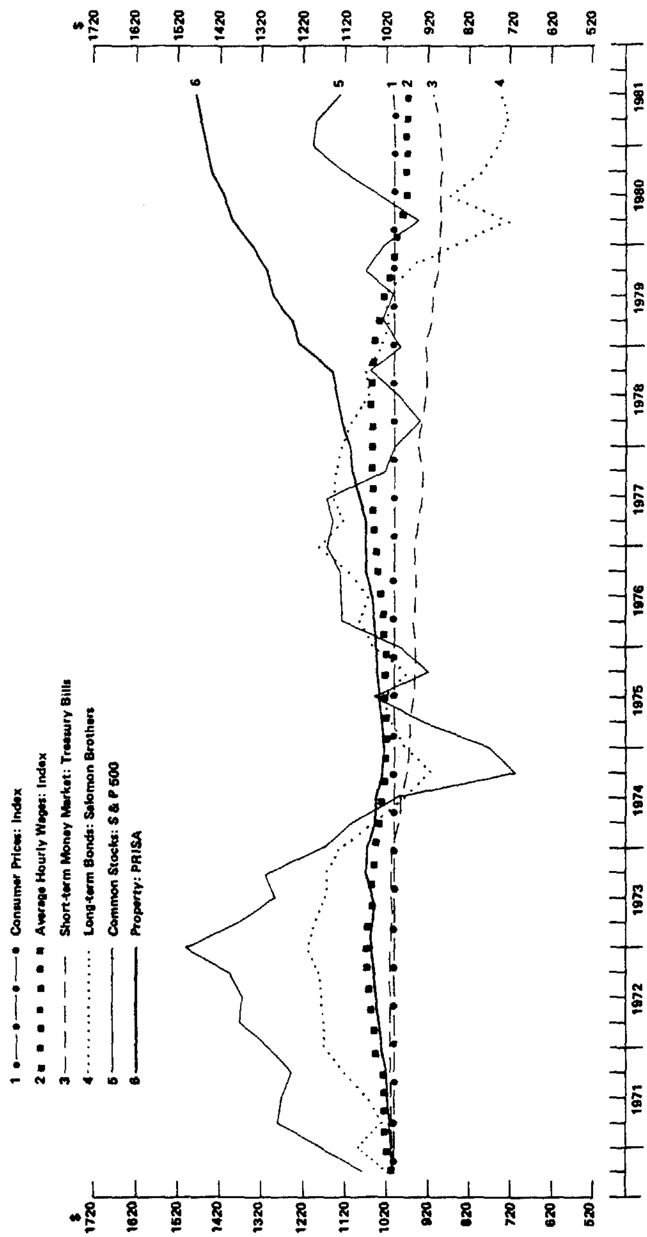
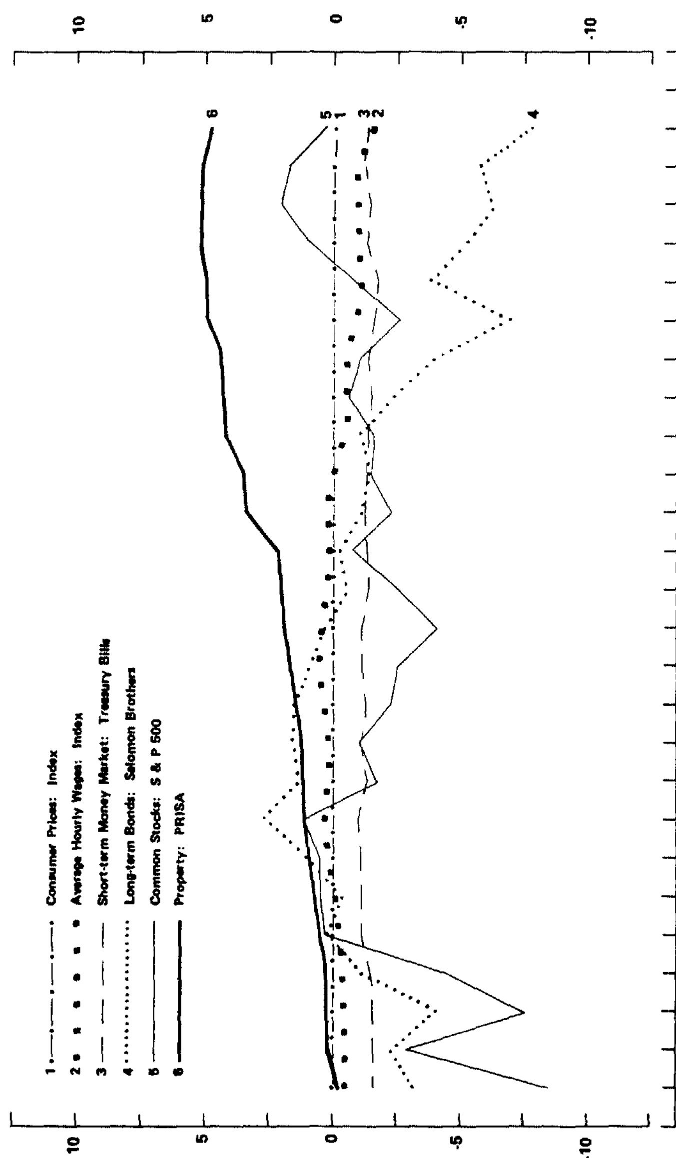


CHART 3
RESULTS OF A SINGLE INVESTMENT OF $1,000 ON JULY 31, 1970
EXPRESSED IN DOLLARS OF CONSTANT VALUE

COMPARATIVE INVESTMENT PERFORMANCE ANALYSIS

CHART 4
EFFECTIVE ANNUAL RATES OF TOTAL INVESTMENT RETURN
ARISING FROM QUARTERLY INVESTMENTS OF $1,000 EACH
MEASURED FROM RESULTS IN DOLLARS OF CONSTANT VALUE



shows the results of the CPI (9%), Average Hourly Wage Index (8%), Treasury Bills (8%), the Salomon Brothers Index (2.1%), S&P 500 (9.6%), and finally PRISA (14.4%). We still haven't reached the right way to measure investment results, because it's desirable to wring out the effect of inflation. So now, let's go back to the single investment and express the results in terms of real rates of return. An initial $1,000 investment in the CPI, wringing out inflation, would have been worth $1,000 at the end of the period. Chart 3 shows that with the inflation taken out, the $1,000 invested in the Salomon Brothers Index at the beginning of the eleven year period would have been worth $736 at the end. The S&P 500 investment would be worth $1,135 at the end, and the PRISA investment would have been worth $1,492. Chart 4 combines the two ideas, showing the rates arising from equal quarterly investments, but on a real basis. The CPI return would have been zero, wages would have returned -1.5%, T-bills -1.4%, Salomon Brothers -7.8%, the S&P 500 +0.4%, and property as represented by PRISA would have returned +4.9%.

It is important to consider the effects of inflation on different forms of assets, namely the three primary ones: bonds, common stocks, and real property. That leads in most cases to the desirability of broad spectrum diversification, which means across asset classifications. To set the policy today for the 1980's, you have to determine the probabilities of different scenarios with respect to inflation and wages if you are to meet the objective in terms of benefits and their desired relationship to wages.

There are today in the United States four basic methods of investing pension funds in property: the open-end commingled property fund, the closed-end commingled property fund, the real estate investment trust, and direct investment in property (for example, a large pension plan can invest by acquiring ownership of properties directly). Open-end commingled property funds are sponsored by life insurance companies, banks and other organizations of a financial nature, and are currently the predominant form of pension property investments in the United States. The basis of operation relies upon the use of unit values in a way that roughly resembles the use of unit values in other commingled accounts and in mutual funds. However, since there is no market from which you can directly determine the value of properties, the valuation procedures depend upon an appraisal process. Each property should be appraised at least annually. Under our procedures, the larger properties are appraised more frequently, generally by outside independent appraisers, supplemented by the inhouse appraisers. Because of the expense of carrying out the appraisal process, it is necessary to limit the frequency with which the unit values are determined.

Property is a relatively illiquid asset and therefore, it's not appropriate to provide for liquidity in terms of the total amount of assets invested, unlike other forms of commingled accounts. Communications on property require a great deal of attention, particularly since this is a new form of investment for most of the pension plans. They have to be educated in reporting procedures. I learned early in my exposure to property that the aesthetics of the buildings really have very little, if anything, to do with the basis for investing. You don't invest in the brick and mortar so much as in the income stream that can be derived from them. To have an appreciation of what that income stream can be, you must analyze the lease structure that applies to the buildings in addition to the physical structure. ERISA compliance, for those who've been involved in this field, has been nothing short of a nightmare with respect to large commingled accounts in which there may be several hundred different pension plans participating. To comply with the requirements and avoid prohibited transactions requires very exacting procedures.

There have been discussions recently in several prominent journals of the arguments for and against open-end and closed-end commingled funds. I'll give you some of the arguments for open-end which will give you a little more information about it. Diversification has many dimensions to it, including the need, as expressed by ERISA and the regulations, to diversify property investments for a pension plan. In many ways I believe a most important form of diversification is by year of investment. This is particularly appropriate for property, because if you set out how you would like the portfolio to be organized, you can't always obtain the type of properties you want in a single year. It may take years to find the properties that would be suitable for the overall diversification. The other forms of diversification which I think are subordinate to this diversification by year of investment are the following: diversification by type of property, by geographical area, by the unit value (that is, you don't want all giant properties nor do you want all very small properties), and by age of property. Some of these points are interrelated. Diversification by the lease terms of the properties may be desirable, because the circumstances that lead to the establishment of the lease terms vary from time to time. An open-end property fund makes it possible to take advantage of opportunities as they may arise. For example, there may be economic circumstances under which large amounts of property suddenly become available for acquisition, such as has happened in the year 1981. Or, you may want to expand and renovate some of the existing properties. The stability of the investment performance is greater in an open-end fund because it can have all the different possible forms of diversification. Liquidation of units is possible with money arising either from new contributions, from investment income, or from the sale of properties. Finally, taking all these characteristics into account, I believe it's more prudent to operate on an open-end basis. That's not to say there may not be other forms of property investment for which the closed-end arrangement may be more appropriate, such as Mr. Attwood's reference to the new properties fund of the Equitable. It may be better to undertake such forms of investment on more nearly like a closed-end basis.

MR. VANDERHOOF: Our next speaker is Hans Mautner of Corporate Property Investors. He is the President. There will be a more specific discussion of real estate by Mr. Mautner. If he tells you that it's not a perfect investment, then you'll have to decide whether he's saying that because it's true or because he doesn't want any more competition.

MR. HANS C. MAUTNER: If the subject assigned to me - "Is Real Estate the Perfect Investment?" - really is intended to pose that question, then I am sure that all of you already know the answer. Clearly, there is no such thing as the perfect investment.

I do believe, however, that some investment forms or at least specific areas within those forms of investment are less imperfect than others. Those investments that have this attribute of relative perfection - if I am permitted that imperfect phrase - do not, however, maintain that status for all times and under all circumstances. Relative perfection is very sensitive, not only to the eye of the beholder, but also to changing external circumstances.

My own bias, as one might expect, is that real property for investors of the type with whom many of you deal, long-term holders such as pension funds and insurance companies, presently is high up on the ladder of relative perfection. It has occupied that position for a period beginning substantially before its current prominence. I believe that considered selectively rather than generically, real estate should continue to maintain many of its positive attributes and be a sound, profitable and appropriate investment for institutions for the foreseeable future. At the same time, I believe that some reservations about real estate as an investment medium are in order, especially in response to a phenomenon which appears to me to be an increasing conviction on the part of institutional investors that real estate is an investment medium for all seasons and that it should continually outperform all other types of investment. I would like, hopefully without implying any lack of conviction of my own about real estate's qualities, to dwell a bit on the caution that I believe is appropriate in considering real estate in the current environment.

In order to afford you some insight into the source of my affirmative biases toward real estate and perhaps even to identify the source of some of my reservations - I might spend a minute or two describing the organization with which I am associated.

Corporate Property Investors (CPI) is a company founded in 1971 with its goal being the preservation of capital over the long-term in an inflationary environment through investment in real property. It is constituted for tax purposes, as a real estate investment trust, a form which was, I believe - until the recent elimination of unrelated business income tax relating to real estate - the most advantageous form for pension fund ownership of real property - even in the face of the negative connotations ascribed to REIT's in general. At the present time, the approximate asset value of CPI is in excess of $1 billion and these assets are owned by some 145 shareholders, both domestic and foreign. Substantially all of our shareholders are institutional in nature. Among our shareholders is a virtual "Who's Who" of large U.S. pension funds. Funds of this type are highly desirable shareholders for a company interested in real estate investment since they are, by and large, professionally run, possessing enormous resources, and having a long-term outlook on property values. Although CPI has invested in a broad spectrum of asset types, certain cardinal principles have been common to most of our investments:

1. A heavy bias toward assets of individually large size. In general, we believe that such assets are usually the highest quality, most resistant to competition, and most intelligently susceptible to efficient management;
2. A conviction that one is far better overpaying for assets of impeccable quality than acquiring marginal or troubled assets on the cheap; there are no bargains in real estate and a derivative is that one ought to have a healthy distrust for anything which proffers the prospect of excessively high returns;
3. An understanding that real estate is a management intensive business. All operating real properties can be made to perform better through intensive hands-on management. The very best properties can probably withstand the negative effects of indifferent management longer than most, but they also benefit from affirmative management, and there is no more affirmative management than that provided by the financially involved owner;

4. Patience. The ability to take a long view of real estate values is important. This is a function not only of one's outlook, but also of one's financial strength. A related "principle", if you will, is that even with the best assets, under the best management, things go wrong from time to time. We believe that the liabilities side of an investor's balance sheet should reflect the relative certainty of periodic troubles. As a consequence, even when mortgage debt was available and plentiful, CPI was substantially underleveraged by real estate standards. That is a bias which has, I believe, stood us in good stead.

In balance, the real estate market has been good to CPI and its investors during the 10 years of our existence. I personally expect CPI and its shareholders to continue to benefit from investment in real estate. As I mentioned at the outset, I do, however, have some concerns which may be worthy of passing consideration.

All of you, I am sure, have heard the long list of positive attributes of real estate which have gained a wide and ever increasing currency within the investment community. Those include convictions that real estate is inflation resistant, that it has performed brilliantly over the last several years and that it somehow represents a real or tactile investment-presumably important at a time when investing in things rather than paper seems somehow more safe or satisfying. Real estate's elevation to near perfect status as an investment medium also has obviously been affected by the troubles afflicting the stock and bond markets, neither of which have, as you know, performed well over the past several years. Certainly in the investment community there is increasing evidence of the force of conventional wisdom regarding the attractiveness of real estate - which serves to make, at least temporarily, a self-fulfilling prophecy out of real estate's near perfection.

One of CPI's Trustees believes as a general rule - not restricted to real estate - that when everyone is buying, it is time to begin selling. Despite the fact that instinctively I share that belief and also believe that conventional wisdom in the investment community has a way of coming unstuck and changing direction, I do not suscribe to the notion that in general the time has come to sell rather than buy real estate. I do, however, think that prudence dictates recognizing some of the generic imperfections of real estate in the current environment.

First, and perhaps foremost, the risk element attendant to real estate investment has probably increased as prices have gone up over the last several years. One measure of investment return popular in the trade is the so-called internal rate of return. Calculation of this return-which is somewhat theoretical-takes into account not only the yield generated by a property at the time of acquisition, but also attempts to recognize yields expected over some future time horizon, and to establish a terminal or residual value. The terminal value simply presumes a valuation or sale of the property at some future time, usually five or ten years hence. It has been my observation that over the last seven or eight years the overall or internal rate of return which investors have sought or thought they were buying through their real estate investments has not varied tremendously. They certainly have varied less than have interest rates or the initial cash yields at which properties are bought and sold. On the other hand, the constituent elements of what produces the overall return have changed rather dramatically.

Let us assume that, in an over-simplified way, what one seeks from a real estate investment in a major regional shopping center is an internal rate of return of, say, 15%. In the mid-1970's such a center could probably have been acquired at a going-in, cash on cash yield, of about 9%, so the "futures" represent only 6/15 or 40% of the overall return sought. In the current environment, those constituent elements are essentially reversed, and the initial cash yield will be close to 6%. As a result, much more of the realization of the 15% overall return sought is a function of futures and depends upon affirmative things happening. To me, it seems axiomatic that this simple reversal has increased the risks of investment since none of us is adequately clairvoyant to predict the affirmative developments with any degree of comfort. Furthermore, when one appreciates how much of the overall return is a function of the terminal residual value - and how much of that in turn depends upon assumptions regarding the yield at which properties will sell in the future it makes one pause. The difference between a 6% and 9% initial yield on a property is effectively the difference between a P/E ratio, if you will, of 17 and 11 - and which of those P/E ratios pertains in the future to a property has a lot to say about returns realized in the event of an actual future sale.

There is no doubt in my mind that some institutional investors are attracted in part by real estate's tactile quality. In discussing the sale of CPI shares with some pension funds, particularly foreign ones, I have been struck by the importance attached by them to owning "things" rather than paper. If this disposition is because of a belief that things have intrinsic value, it is obviously suspect. Large masses of steel, concrete, and brick do not necessarily retain their value. There are surely lots of abandoned supermarkets, service stations and other now off-location properties which have had their so-called intrinsic value disappear. It is an asset's capacity to produce income which ultimately gives it value. If it has lost that, no protestations about intrinsic value or replacement cost will be of much relevance. We should all be wary of intrinsic values.

Because of the enormous interest and activity in real estate transactions currently, real estate is perceived to be a moderately liquid medium. I believe that this perception of reasonable liquidity further disposes institutional investors to consider property investment favorably. It is, in fact, true that at the moment property is quite liquid in the sense that there are a large number of well-heeled and interested buyers who represent an active and responsible market. While no one would attempt to make the case that a piece of property had the liquidity attributes of publicly-traded securities, it is remarkable how ready a market can be found for real estate assets of high quality. The maintenance of this liquidity, however, is as sensitive to market psychology in my mind as is the question of what is real estate's intrinsic value. Both are to some degree a function of the prevailing environment which holds real estate to be a sound and highly desirable investment and thus provides an adequacy of buyers to support a market. In other words, it is the very consensus of investors agreeing that real estate is valuable and desirable which provides the market with the liquidity and value support - which in turn helps make property an investment medium avidly pursued by institutional investors. One can only wince at the prospect of what would happen to both liquidity and notions of intrinsic value were there to be a massive change in the psychology of investors toward real estate in general.

It is probably unlikely that such a drastic change in perception will take place in the foreseeable future since the percentage of aggregate U.S. pension funds' assets committed to real estate is so small, the investment target in terms of percentage of assets to be in real estate so large, and the ready supply of equity properties so limited. When one adds to this set of circumstances the increasing importance of the U.S. economy and its real estate assets as a target for investment capital from world wide sources, the supply/demand imbalance suggested bodes well for the maintenance of values of high quality properties.

I suppose my main concern about any notion that real estate is a perfect or near perfect investment is the implicit suggestion that real estate is a generally undifferentiable commodity - when it really is quite the contrary. The distinction between good and bad is enormous. That will never be so obvious as when external circumstances such as economic conditions, market psychology, or some other combination of phenomena take a turn for the worse - as at some point they must. At CPI we have tried very hard to acquire only the highest quality assets, sometimes at the cost of perhaps paying top dollar. The resistance of those assets to reduction in value in difficult times has been extraordinary and argues strongly to buy the best.

It is almost a real estate truism that if substantial capital is available someone will find a way to employ it - whether or not the use is economically sound. Certainly the REIT phenomenon of the early 1970's was a sad testimony to that fact. With a great and increasing flood of institutional money committed to seek investment in real estate, the potential for abuse or at least the making of regrettable investments is there. I would imagine that the risk of making the regrettable investments falls most heavily on those funds who have not as yet established a very substantial investment position in real estate, who wish as a consequence to "catch up" and participate in this market place, and who probably by definition have the least experience as regards the pitfalls to be encountered. If such funds insist on participating, they should do so in the knowledge that the risk constituent has increased because of the dramatic increase in prices which I have mentioned. The industry also is evolving into a posture where institutional investors are, probably out of necessity, becoming more prepared to participate as financial partners in the development process, which also adds risk. Parenthetically, this is a trend which I personally expect to see accelerate in the next few years. Also, many of the best properties are already in strong hands.

In the face of these reservations, should funds still wish to proceed, they should almost certainly do so through some form of financial intermediary - and one which I believe should exhibit some of the biases to which I have alluded. These include the following:

1. The intermediary should afford to a fund or funds the ability to invest in assets of substantial size. Although there are obviously

exceptions, within certain limitations, I believe that bigger is better in real estate. Generally such assets can better withstand the rigors of competition and they justify the intensiveness of management which is so important;

2. Since none of us is prescient, funds should invest in a fashion which affords diversification and thus provides insulation against the effects of having a single property become troubled. Those two factors - size and diversification - in and of themselves suggest that a capital pool to be effective in real estate should probably be measured in the hundreds of millions of dollars.

   Also arguing for a large capital pool is the fact that real estate investment is a detail-oriented and technical undertaking. In order to conduct it effectively, a staff of professionals is required and given the salary structures in that business today, I believe a minimally economic pool is probably $300 million;

3. Funds should invest through an intermediary sensitive to and adept at property management. The old bromide that the best fertilizer is the farmer's own shadow applies in real estate as well. Any intermediary who believes its work has stopped with acquisition and, perhaps, the hiring of a manager, shortchanges the investor over the long term.

So despite my reservations, I believe that under the right circumstances real estate is a desirable investment medium for institutional investors. Notwithstanding the optimism which periodically emanates from Washington, I am, on balance, skeptical of this country's ability to sacrifice those things to which it has become addicted,in order to combat inflation. If inflation is to be an ongoing fact of economic life - high quality,well-chosen real estate should continue to be an attractive hedge. I believe further that the supply/demand imbalance attending real estate will continue and that even when the relationship changes or market psychology changes, as it must at some point, the best properties will continue to hold their value - especially if the owners are not forced for some reason to sell at a moment of market weakness. If institutions are sensitive to risk and can accept it,and if they commit their funds to the stewardship of organizations who are professionally staffed, not only to invest funds but to manage intensively the properties owned, real estate should continue to be one of several useful and profitable investment forms. It is, however, no more than that and any attributions of perfection should be viewed with great skepticism.

MR. VANDERHOOF: One of the topics on the original suggested program was immunization. It surely is a topic of interest to me, but not one where a great deal of actuarial work has been published recently. The most recent work that comes to my mind is a paper by Phelim Boyle for the last International Congress. Needless to say, the proceedings of the International Congresses do not receive wide distribution.

Strangely, while actuarial publication on this subject has slowed, that of the academics in finance has expanded. Duration and the algorithm of immunization are receiving increasing attention in the academic literature. For this reason, I propose to report on the discussions at the June conference on duration.

The University of Oregon has had for many years a Center for Capital Market Research. There have been extensive publications by them, and the leaders of the Center have interested themselves particularly in the study of duration and immunization. The leading professors of the Center accepted other posts for the current academic year and decided that the remaining profits of the Center could be best expended by holding a final conference on these subjects. They, therefore, set up this conference, commissioning several papers on the subjects and inviting a modest number of participants -- 24 to be exact. I believe that Phelim Boyle and I were the only actuaries. The academics included Bill Sharpe, Dick Roll, and Chip Halley, to name a few. Representatives of the practitioners were Jim Ward, of Manufacturers Hanover (at that time), and various banks and trust companies. There didn't seem to be any insurance companies on the program, though one consulting actuary was scheduled but did not appear. The proceedings of the conference will appear in book form in about a year.

I would classify the papers into a few categories. The first category would be the negative group. Jonathan Ingersoll of the University of Chicago presented a paper, "Is Immunization Feasible Evidence from the Crisp Data?" His basic conclusion was that the techniques could not work. A second negative view was that of Barr Rosenberg of the University of California. He presented graphs of Principal Component Analysis of the movements of bond prices and concluded that immunization was simply too gross a procedure to accurately predict the price movements of bonds. He also discussed the results of his own bond pricing model but did not reveal any of the details of this model. In a later part of the section, one of the practitioners described the successful use his firm had made of the Rosenberg bond model.

A second group of papers was from academics who were interested in finding ways to make the immunization algorithm work more effectively by changing the structure of the theory. Generally, the academics do not accept the possible usefulness of the simple MacCauley-Redington formulas for duration. They believe that the underlying assumption of flat yield curves and parallel changes is impossible. Such predetermined forms for the yield curve and changes therein would allow some investors to make guaranteed arbitrage profits. This is basically the Ingersoll, Skelton, and Wiel criticism. However, some of the theoreticians believe that immunization can be saved as an intellectually respectable tool for portfolio management if a more sophisticated definition of duration is adopted. These papers generally try to develop better descriptions for the term structure of interest rates and then test the results of using strategies implied for those new formulas. I would put in this category papers by Brennan and Swartz, Schaefer and Nelson, Fisher, and Babel. The form the academics use for the testing of immunization strategies is essentially trying to produce at the end of five, ten or fifteen years a bullet maturity that is the result of accumulation of funds at the original expected rate. Their conclusions were that, while their own particular strategy is modestly better, classical duration seems to produce about as good a result and should probably be the method of choice for, at least, the present.

The differences between the revisers and the original negative group may rest in the scope of the work. Ingersoll likes to test over short periods, and immunization is not very good over periods of days or weeks. Rosenberg wants to explain all of the factors that affect bond prices, and duration is only one. I basically don't believe that there is an impossible difference between the results of the tests. The answer you get depends on the question you ask.

In addition, I believe that there may be many different dynamics involved in the term structure of interest rates. However, almost everyone accepts that two important components of market interest rates are the real rate of interest and the rate of inflation. However complex the total mechanism is, the fact remains that the real interest rate can be reasonably expected to be flat over the term structure, and the inflation rate enters into the entire term structure even though the form of the entry changes. In other words, there is some kind of level rate,and there are roughly parallel shifts.

The last group of papers were the enthusiasts-- Oldrich Vasicek, and myself. Oldrich's contribution was a paper done with Gifford Fong discussing how the classic duration approaches should be modified to avoid losses. He pointed out that, while having the second derivatives substantially different, there were possibilities of substantial losses if the slope of the yield curve changes. His point really is that the variations in the shape of the yield curve can cause losses that prevent the automatic arbitrage profits that the Chicago school worries so much about.

My own contribution was a paper discussing how immunization can be applied to situations with varying cash flows.

I don't have time to discuss in detail the reports of the practitioners. I think that the results achieved by Wissner and Ward of Manufacturers speak for themselves. Over the last year or so, they have attracted about $1 billion of funds for management. Almost all of their portfolios are well ahead of schedule, though a few are slightly behind. The clients are happy, and, as Jim pointed out, if interest rates ever fall, their clients will still be getting what they contracted for.

My current opinion of the whole matter is that the academic community is now accepting the fact that whether immunization produces results within five basis points fifty per cent of the time, or fifteen basis points ninety percent of the time doesn't matter. The fact is that the only practical approach to the management of a bond portfolio in an unstable economy that will work better is one that depends on the correct prediction of future interest rates. No one has yet proved that ability, and I wouldn't count on it for my own portfolio.

Now our last speaker is Robert Kirby of Capital Guardian Trust. He is the Chairman of the Board of Capital Guardian Trust. He is on the Board of The Capital Group. He works with a little less than half a billion dollars of foreign investments.

MR. ROBERT G. KIRBY: My qualifications, if any, for international investing are that I have had some experience with two organizations who have made a fairly important commitment to foreign investments, from a totally different point of view. Incidentally, I should stop right there and expunge the term "foreign investments" from my language. We have had an office in Geneva for about 20 years and all the people in our Geneva office get annoyed when we talk about foreign investments. They say, "Look, to us U.S. Steel is a foreign investment", so we have made a pact within the organization to refer to U.S. and non-U.S. investments.

One of these organizations, The Capital Group, manages a mutual fund with about $150 million in non-U.S. securities out of Geneva. Within the organization, I represent Capital Guardian Trust Company, and we manage another $150 million in a commingled non-U.S. fund that is set up for the use of corporate pension funds. The second organization is the College Retirement Equities Fund, of which I have been a trustee for a while. In the past year they have launched an international diversification and have, as a first step, made a commitment to attain 5% in non-U.S. securities. Five percent of an 8 billion dollar equity fund is a big step in that direction.

These two organizations have taken two totally different views. As you may know, the Capital Group Companies are the Neanderthal men of the investment management business. We still believe that you do it the way Graham and Dodd told us to do it, in the textbook they wrote around 1912, and we still take a very fundamental approach to the investment process, whether it's non-U.S. or U.S. I was interested in getting a chance to take the assignment to the CREF Board because it gave me an opportunity to live with the philistines for a while. My fellow trustees include Paul Samuelson, Ben Friedman and Bill Sharp. In that environment, as you can imagine, we're approaching the problem of international diversification from the standpoint of reducing variability and at least maintaining the potential return, therefore enhancing the return in a risk-adjusted sense. As the U.S. section of the portfolio is moved toward a big passive core, this point of view has been extended in the non-U.S. portion, so that the CREF has decided not to build up a research staff in the normal sense of the word. They are going to have people that they hope will develop some expertise in the dynamics of the major industrial economies and, maybe more importantly, in the dynamics of currency relationships. They are not going to simply weight foreign markets in accordance with their relative size of the total. They are going to skew this toward a judgment of what is attractive and what isn't when it comes to major markets. But in terms of implementing this non-U.S. investment policy, they are going to try to develop a passive cross-section fund in each of those foreign markets. So, the first characteristic of the CREF portfolio is an absolute mountain of names, and I would say in their 300 to 400 million dollars of non-U.S. securities they probably have five times as many names as we do in our slightly larger total corporate amount of U.S. securities.

At this point, let me back up and tell you a little bit of our history, (how we got there and how we've approached the problem), and give you some of the reservations we have regarding the way things seem to be going in that area at this particular time. Because the U.S. has been a remarkably provincial society socially, culturally and financially, the idea of buying something non-American has indeed been a long term arriving. Although we've had an office in Geneva for 20 years, I don't think we can claim any particular prescience in that act. It really started with an idea we had in the early 1960's that the world was beginning to run out of certain kinds of natural resources, many of which were not in the U.S. So, we started a new mutual fund called International Resources Fund and decided to head that out of Geneva because one of the guys we had with the greatest expertise in resource positioning outside the U.S. happened to be a Swiss citizen whose wife was going to leave him if he didn't go back to

Europe. It developed into a fairly sizable commitment at that point in time (almost 20 years ago), with five investment-type people. Suddenly, along came the Interest Equalization Tax which made it just about impossible to invest in non-U.S. securities with the hope of achieving any sort of above-average return. At that point, we wondered whether we should abandon the Geneva office, but decided against it. One of the reasons was, in all candor, that people in Los Angeles had found Geneva a very nice place to visit. The other one, and I think perhaps equally important, was that we were beginning to be aware of the importance of non-U.S. earnings to the big international companies. All of a sudden the Proctor and Gambles and the Minnesota Minings and the Kodaks and the IBM's had more than a third of their earnings coming from non-U.S. activities. These represented, of course, major holdings across client portfolios. We thought that if we were really going to understand these companies, we had to understand how competitive they are in Europe or Japan, as well as how competitive they are at home. We decided to go ahead with the Geneva office, and the research was really reoriented in the direction of looking at the overseas operations of U.S. companies and the major foreign competitors of the big multi-national U.S. companies.

While that basic theme has gone forward in recent years, the popularity of investing in international portfolios has developed considerable momentum. I think in some ways you can blame, or credit, the modern portfolio theorists for getting it going because they were aiming at true diversification, at being able to maintain or increase your return potential with less variability or less risk. That's what got it started, but I have found in my 30 years in this business that big institutions are no different than little old ladies in Pasadena. They all want to do the same thing at the same time. A few leaders in the field, in the corporate pension fund area, began to invest in non-U.S. securities, and there has been a great wave in that direction ever since.

A lot of what is happening now could probably be called rather faddish in nature, but the fact of the matter is that it has a great basis in fact. One of the things I think we have to face is that the U.S. securities market is today around 47% of the value of the total world securities market. This number, which is down from 65% or 75% only a couple of decades ago, will continue in that direction. It is just plain foolish to restrict yourself to 40% or 45% of the world's alternatives. If you restrict your choices to the 500 - 1,000 fairly large capitalizations in U.S. publicly held companies, you're probably going to do a worse job, other things being equal, than if you have a similar knowledge of 1,500 companies using all international large capitalizations, and this has really been the rationale for our going somewhat further down that road. We think we will produce a better result because we are looking at a greater number of alternatives.

Also, I think you clearly have a trend, whether it is the result of more liberal international trading patterns or reduction of import restrictions or whatever. Suddenly we find ourselves in a world where, for certain kinds of industries you may find attractive, you're probably not going to find your best alternative in a U.S. company. I suppose two overwhelming examples would be automobiles and home enterainment equipment. If you want the best, most dynamic company in the world in those industries, it may be in the U.S. but it may well not be. It may even be that if you want the best tire company in the world, it is no longer in Akron, but somewhere else. We think that this dynamism will go forward. In order to invest in certain kinds of technologies (particularly the new ones), and the new areas of products or service, you may find that your best alternative is a non-U.S. company.

Now, some of the problems in implementation are pretty obvious. The first is developing the muscle to do research, if you're going to do it in an active way. I think the CREF solution to the problem is probably a very good one. The opportunity to be wrong in a non-U.S. portfolio is probably greater than it is in a U.S. portfolio if you're an organization domiciled here. So the passive approach is probably a pretty good one. If you're taking the Capital Group's approach, it is very expensive to build a base and get people stashed all over the world who really understand foreign companies. We have taken the point of view that we would have an auto analyst in Geneva and an auto analyst in Los Angeles and jointly they would try to make enough separate and joint field calls around the world to really get a handle on the world's automobile business, so that we can make a good decision to buy Daimler, Benz or Nissan or whatever the opportunities may be. Probably the second major problem is that of currency. We have found that it is very difficult to apply old-fashioned Graham and Dodd fundamentalism in the light of fluctuating currency. I suppose our biggest difficulty in tackling the investments in non-U.S. securities is reconciling the cultural difference between investment people in Geneva and investment people in Los Angeles. I think that many of the people who invest money in Europe have what I call the "horsemen in the night" syndrome, which is almost a heritage. They've been so used to having the Huns or the Visigoths or the Norse tearing into town in the middle of the night and carrying off all the women and children, that there is a short term orientation and a sensitivity to something like a currency risk. They prefer a mediocre company in an area where they like the currency, to a superb company in an area where they're nervous about the currency. This is a problem I can underscore better than I can resolve, but it is something you have to cope with if you're going to take an active role in international money management.

We have perhaps 60 corporate pension fund clients who are Fortune 500 companies (such as IBM, Mobil, etc.), and I would say that over half already have substantial non-U.S. commitments and that at least two-thirds of the other half are implementing plans in that direction. I would go so far as to suggest that by 10 years from now, and surely by the end of this century, you will probably see at least a third of most major U.S. corporate funds invested in foreign securities. It is an area with much dynamism, where there is going to be as much commitment to new people, new procedures and research as any other area imaginable.