

Investment Policies, Processes and Problems
In U.S. Public Sector Pension Plans:
Some Observations and Solutions from a Practitioner

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Note

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Introduction

Public and private sector pension plans are subject to the same financing, investment and organizational principles, and therefore wrestle with the same issues when establishing and implementing investment policies. However, the process of deciding and implementing investment policies are different. Investment policy decisions for private sector pension plans are usually made behind closed doors and by well-paid, full-time individuals with strong investment backgrounds. In contrast, investment policy decisions for public sector plans are usually made in a public forum fish-bowl, and often by time-pressed individuals receiving honorariums and possessing limited investment expertise.

Part I of the paper provides some definitions to avoid confusion and presents summary statistics to illustrate the important role public sector pension plans play in the U.S. pension system. The context within which I offer my analysis, findings and conclusions is then clarified.

Part II discusses the generic investment policy process implicitly followed by most private and public sector pension plans in the United States, Canada and the United Kingdom. The strengths and weaknesses of the generic process are highlighted and improvements are suggested. Adopting the suggested improvements should result in more informed and more successful investment policy decisions in both private and public sector pension plans.

Part III begins with a discussion of the documented impact ineffective governance structures and procedures have on pension fund investment performance. With this backdrop, I identify and describe seven organizational and behavioral impediments public sector funds often face when setting and implementing investment policies. These include inadequate understanding financing and investment principles by governing fiduciaries¹, the inability to separate policy approval from policy

¹ When discussing the management of assets held in trust, it is useful to distinguish three levels of fiduciary responsibility. Governing fiduciaries have the ultimate responsibility for ensuring assets are managed prudently and profitably. Governing fiduciaries often employ managing fiduciaries - in form of an investment committee – to provide advice and oversee policy implementation. And managing fiduciaries often employ a number of operating fiduciaries with specialized skills and knowledge implement and

implementation and the over-reliance on past performance when making decisions. The identified impediments are not unique to public sector pension plans, but they are usually more visible than their private sector counterparts.

Part IV concludes the paper by introducing a one-page performance report designed explicitly for governing fiduciaries. The format helps trustees focus their minds on those investment issues and decisions that ensure plan assets are being prudently and profitably managed. The same one-page format provides plan participants with an easy-to-understand report card telling them how well the assets backing their pensions are performing. The reporting format has equal application to private and public sector pension plans.

PART I: BACKGROUND INFORMATION

Distinguishing Public Sector Pension Plans from Other Plans

To avoid confusion, I will distinguish between three types of pension plans: private sector-sponsored, public sector-sponsored and government-sponsored. Private sector-sponsored pension plans are employment-based plans established by firms such as IBM, General Motors and AT&T. Public sector-sponsored defined benefit pension plans cover employees working for federal, state and local governments. Government-sponsored pension plans are country-wide, compulsory programs such as the Social Security Retirement System in the United States and the Canada and Quebec Pension Plans in Canada. There is a fourth category of pension plan that I generally include under private sector plans; these are plans established by not-for-profit organizations and include colleges, universities and non-government agencies.

I make these distinctions because my focus is on defined benefit plans established for public sector employees. It also avoids confusion. In some studies, the term “public sector plan” refers to government-sponsored national pension plans. These are not my focus. In my experience these plans differ significantly in terms of their governance

manage investment policies on a daily basis. In the public sector, the terms “trustees” and “governing fiduciaries” are used interchangeably.

structures, fund sizes and investment issues - albeit the differences are not mutually exclusive.

Importance of U.S. Public Sector Pension Plans

As indicated in Table 1, some 28% of the over \$10 trillion in retirement assets are in public sector pension funds, with two-thirds or some \$2.2 trillion in funds managing assets on behalf of state and local government employees. With 90% of state and local government employees participating in defined benefit plans, it's reasonable to conclude that about 90% of the \$2.2 trillion dollars are assets being managed in defined benefit plans.² This means asset in public sector pension defined pension plans are roughly equal in value to the total assets in all private sector defined benefit plans, which in 2001 summed to \$1.9 trillion.

While their total assets may be cumulatively equal, individual public sector pension funds are, on average, larger than their corporate counterparts. For example, as noted in Table 2, nine of the ten largest U.S. pension funds cover state employees, with California teachers and state employee pension funds having combined assets of over \$225 billion. The 100 largest U.S. pension funds managed some \$2.9 trillion in assets, and they were almost equally divided between the private (51) and public (49) sectors. However, the 49 public sector plans held 60% of the assets.

Context of My Analysis, Findings and Conclusions

While I have worked on pension issues affecting most types of pension plans for almost 30-years and in several different countries, this paper focuses on U.S. public sector pension plans because I am currently employed in the U.S. and provide consulting advice to two very large state-sponsored public sector pension plans. My analysis, findings and conclusions apply with little adjustment to public sector pension plans in Canada and the United Kingdom.

² In 1998, an estimated 98% of full-time state and local employees participated in one or more pension plans. Fully 90% participated in defined benefit plans; 14% in defined contribution plans; and 33% could defer income in a supplementary plan. Source: "An Evolving Pension System: Trends in Defined Benefit and Defined Contribution Plans", *EBRI Issue Brief*, Number 249, September 2002, Figure 17.

Candid discussions in airport lounges and at international conferences with colleagues from competing consulting firms have only served only to confirm in my mind the robustness of my analysis, findings and conclusions. Dare I say it, but even trustees and investment staff of public sector plans in their moments of frustration confirm what my colleagues and I will only voice amongst ourselves when we are out of ear-shot of the people who pay our invoices. Only tenured professors with little interest in consulting fees risk biting the hands that feed them.

PART II: TOWARDS MORE INFORMED INVESTMENT POLICY SETTING³

Investment Policies Involve Two Big Risk-Return Decisions

Two big decisions comprise all investment policies: a fund's policy exposure to major assets classes under the two broad headings of equity and debt, and the extent to which the selected asset classes are to be actively managed. These policies are conveniently termed "asset allocation policy" and "active management policy", respectively. It has long been established that asset allocation policy is the principal determinate of a fund's long-term investment performance, explaining about 90% of the return volatility, assuming that a reasonable proportion of the assets are being actively managed not simply managed as index funds. The balance of the volatility of fund returns – the 10% - is attributed active management.

While from a statistical perspective, the active management policy decision appears to be of second-order importance to the asset allocation policy decision, it is nonetheless a key investment policy decision because a successful active management adds additional returns to a pension fund making it easier to pay benefits, while unsuccessful active management subtracts returns and reduces the amount of assets to pay beneficiaries' benefits.

³ Part II of this paper draws heavily from Ilkiw, John H. and Steve M. Murray (2002): "Establishing Higher Confidence Policy Exposures: Establishing Higher Confidence Policy Exposures to Private Real Estate, Private Equity and Hedge Funds Using Two-Stage Asset Allocation", *Russell Position Paper*, Frank Russell Company. This publication explains in more detail why a two-stage approach to asset allocation me and more informed investment policy setting.

Generic AA Decision Process

Figure 1 captures the four generic steps in the asset allocation decision: collect inputs, model the behavior of asset and liabilities, evaluate alternative asset allocation combinations and then select the preferred asset allocation. The evaluation of alternative asset allocations invariably involves the literal or figurative use of mean-variance optimization procedures to calculate efficient combinations of asset classes – those weightings that provide the highest expected return for a given level of portfolio volatility, measured annual standard deviations. One of the mathematically optimized alternative portfolios becomes an investor’s long-term asset allocation policy, and this includes many U.S. public sectors pension funds.

The optimization decision-framework with its efficient frontiers and optimal portfolios is ubiquitous in the world of financial management. The framework is routinely used by financial advisory websites, is available in popular and low cost home-computer programs, and is highly regarded by professional and amateur investors because of its appealing precision and its origin as a concept that earned a Nobel Prize. All over the world investors are using these programs to find optimal allocations to domestics and foreign equity markets, domestic and foreign fixed income, private real estate, private equity, hedge funds and a host of other exposures including small capitalization stocks, managed future, commodities and timberlands.

Uncertain Parameters and the “Perils of Optimization”

While optimizers are often the center-piece of the asset allocation policy decision-process, it is also the processes Achilles’ heel. Increasingly optimizers are being recognized as “estimation-error maximizers” and that they provide precise but inaccurate guidance for making asset allocation policy decisions. This is because the parameters used by optimizers to calculate efficient combinations of different investments- expected returns, standard deviations, correlations - must be estimated, and these estimates are subject to errors. Their true values are unknown, and will always be unknowable.

The answers provided by optimizers are very sensitive to small changes in the value of estimated parameters submitted by investors, and the weightings of the efficient and near-efficient portfolios can vary widely. Experience has shown that a judicious selection of

inputs can justify almost any asset allocation policy. If at first the optimization model does not confirm the attractiveness of a favored asset allocation, simply “tweak” the inputs in the right direction, or add a suitable constraint, and run the model again. *Voila* – the spectrum of efficient portfolios now includes the favored asset allocation policy.

Differential Levels of Parametric Uncertainty

All forward looking estimates of investment parameters are subject to uncertainty, but some parameters are more susceptible to estimation errors than others. The long-term relationships among the major asset classes – stocks, bonds and cash – are generally well understood and their statistical parameters can be estimated with relative confidence. These asset classes have been studied for decades and their expected relationships have been confirmed using ever-improving historical data. Investors will always debate the magnitude of the parameters summarizing the asset class relationships – but few disagree with the ordinal values of the parameters that capture their long-term relationships. First, equities are expected to outperform bonds, and bonds are expected to outperform cash. Second, equities are more volatile than bonds, and bonds are more volatile than cash. And third, although asset class relationships are firmly inter-related, their behavior is sufficiently uncorrelated to reliably diversify risk.

However, the behavior of other asset classes or investment opportunities cannot be modeled with the same level of confidence, and this includes three performance enhancing investment opportunities that are the current focus of many public sector pension funds – private real estate, private equity and hedge funds.

Return series for infrequently traded assets such as private real estate and private equity rely on appraisal pricing procedures and this introduces a higher level of data unreliability. Parameters derived directly from appraisal-based data underestimate both standard deviations and correlations, which enhance the statistical attractiveness of these investment opportunities. Appraisal pricing procedures can be highly subjective and in some situations, purposely misrepresentative. Many hedge fund strategies hold positions in infrequently traded securities and are therefore subject to the same appraisal pricing problems as private real estate and private equity. Verifying actual performance can be further complicated by the lack of transparency that accompanies many hedge fund

strategies because many managers are reluctant to reveal their proprietary ideas and risk compromising their performance advantage.

When considering an allocation to private equity, estimating the magnitude and stability of the illiquidity premium complicates investment modeling. Illiquid assets should pay a premium over their public market counterparts to compensate investors for accepting illiquidity risk – the inability to quickly sell an asset to take advantage of another more compelling investment opportunity – but what magnitude is appropriate? Further, is the risk premium suggested by past experience representative of a future that is more accepting of private equity investing? The illiquidity premium should narrow as more institutions actively embrace private equity investing.

Perhaps the greatest hurdle is the inability to separate the attractiveness of an investment exposure from the success or failure of active management. In the realm of publicly traded securities one can access the returns from broad market asset class by investing in index funds, and avoid the risk of active management. Investors are assured of earning at least the market-average return, and in many cases a return that is above the performance of the average actively managed portfolio. With private real estate, private equity and hedge funds, investors cannot separate the attractiveness of the income stream from the risk of active management. This is especially true of hedge funds, which are not an asset class – but a collection of disparate and unconventional active management strategies that frequently defy clear definition and usually employ leverage.

When interpreting the results of an asset allocation study that recommends an allocation to private real estate, private equity and hedge funds – consider to what extent the favorable experience modeled in the study is attributable to successful active management. If investors don't think they can find, or buy the active skills needed to implement a successful private real estate, private equity or hedge fund exposure, then they should not accept the asset allocation recommendation. Why? Because the success of these exposures is driven by an investor's ability to select superior managers, not by

simply by the decision to be exposed to an investment opportunity as with broad market assets classes whose performance can be replicated by low-cost index funds.⁴

Two-stage AA Recognizes Differential Parametric Uncertainty

Because of the differential uncertainty in capital market estimates, investors should establish policy portfolios in two stages. Policy exposures to broad market asset classes are first decided in Stage I using higher confidence forecasts. Exposures to performance-enhancing investment opportunities are then decided in Stage II using lower confidence forecasts, as well as qualitative and difficult-to-quantify data.

Figure 2 illustrates that two-stage asset allocation inserts an additional step to the generic process of selecting an investor-specific allocation policy. The key features used by Russell its approach to two-stage asset allocation are summarized in Figure 3. This error-reducing approach to asset allocation finds its origin in research undertaken by Russell and others in the late 80s and early 90s. It has been advanced and refined by Russell in concert with clients during its practical application in hundreds of asset allocation studies.

Stage I Allocations

With the objective of finding a high-confidence asset allocation that best meets client-specific objectives, Stage I focuses on finding mathematically optimized allocations to well-understood broad market domestic and foreign asset classes. For US-based investors, this means finding optimal exposures to US equity, non-US equity and US fixed-income.

Because Stage I uses only high-confidence asset class assumptions, investors can assess with relative confidence – but not with certainty - the range of efficient portfolios calculated by an optimization model, and the ability of the portfolios to achieve their specific risk-return objectives. Investors also have the comfort of knowing they can implement the Stage I policy portfolio through low cost index funds. They do not have to accept the additional costs, risks and uncertainty of active management. Because so little

⁴ Ilkiw, John, Karl Scheer and David Payne (2002), “Relative Importance of Manager Selection in the US Private and Public Equity Markets”, *Consulting Practice Note*, # 56, Russell Investment Group, January.

subsequent effort is required to implement a Stage I policy portfolio, they are often referred to “no-brainer” policy portfolios.

Stage II Allocations

Using the Stage I asset allocation as a high-confidence benchmark, Stage II evaluates the risk and rewards of potentially performance-enhancing investment opportunities. By performance enhancing, we mean replacing a portion of the no-brainer policy portfolio with exposures to investments that make it easier for an investor to achieve their objectives with little or no increase in risk. Private real estate, private equity and hedge funds are among the most frequently referenced return-enhancing investment opportunities. However, as noted in the preceding section, the behavior of these investments cannot be modeled with high confidence and looking for guidance from optimization models can be very misleading.

In the absence of high-confidence forecasts for performance-enhancing investments, investors must rely heavily on good judgment. In the world of asset allocation studies, this means developing assumptions tied to supportable investment beliefs, logic, experience, asset-liability simulations and testing sensitivity of results to changes in estimated parameters. The various Stage II allocations are evaluated relative to the performance of the higher confidence Stage I policy portfolio.

Before a Stage II allocation is selected as a policy portfolio, it should satisfy two criteria. First, its expected performance must dominate the performance of the corresponding Stage I policy allocation. This is usually not a difficult criteria to meet because the capital market assumptions used to capture the expected performance of the investment opportunities being assessed are invariably favorable. Second, the investor should be satisfied that the capital market assumptions used to portray the performance have a reasonable expectation of being realized. This criterion is often much more difficult to satisfy. When it comes to evaluating different performance-enhancing investment strategies, experience has shown that investors are usually divided into two camps. Those who believe in the future success of a strategy and therefore the robustness of the assumptions used, and those who don't, and the movement between the two camps is limited. If you find yourself in the second camp, the two-stage approach is still a

valuable framework because it encourages discussion of issues that go beyond simply debating asset class weightings.

Clarifying Expected Impact on Fund Performance

Figure 4 is an example exhibit that summarizes the results of an asset allocation study that employed the two-stage approach to evaluating alternative asset allocations. In the example, an investor with a ten-year investment horizon wanted to understand the impact of a different of asset allocations, including 5% and 10% policy exposures to hedge funds. On one exhibit, the investor can see projected return-risk trade-offs to different asset allocations.

The terms “minimum volatility”, “stage I no-brainer policy” and “stage II performance enhancing exposures” highlights the investment performance and associated investment implementation implications of each alternative. The implications of each of these alternative allocations would be further underscored as the advisor explained the relative confidence associated with the parameters used to forecast the future performance of different asset allocations. And in particular, that the improved performance associated with the hedge fund exposures – higher returns and lower volatility - assumes the successful implementation of the modeled hedge fund strategy.

End Result: Higher Confidence Policy Portfolios

Like other asset allocation models, the two-stage asset allocation approach does not prove that a given investment opportunity will enhance performance. However, the two-stage decision process does help investors establish higher-confidence policy portfolios. Why should a two-stage process instill investors with more confidence in their policy portfolio? There are two reasons.

First, investors understand clearly why they expect their Stage II policy portfolio to outperform the Stage I alternative of investing in low-cost, broad market index funds. Second, this improved understanding encourages investors to focus their subsequent management activities on those factors that are critical to realizing their Stage II expectations – manager selection, portfolio construction and risk management. Because most Stage II investment opportunities require active management, the success of Stage

II policy portfolios rests on an investor's ability to select good managers, construct good portfolios and manage risks effectively.

PART III: POOR GOVERNANCE STRUCTURES AND PROCEDURES IMPEDE SUCCESSFUL IMPLEMENTATION OF INVESTMENT POLICIES

Poor Fund Governance: Costs, Descriptions and Prescriptions

It is well established that poor pension fund governance structures and procedures hinder the effective implementation of investment policies and it has been estimated that about ineffective governance practices lower annual pension fund returns by about 50 basis points annually. While one-half of one percentage point of return may seem small, in the world of pensions it is a very large number.⁵ With some \$2.2 trillion in state and local pension assets, the 50 basis points translate into some \$11 billion in forgone returns each year, certainly a large amount of money from a beneficiary's perspective. From an actuary's perspective, a 50 basis point increase in return over the long-term lowers pension costs by about 8%. From an active money manager's perspective, 50 basis points is often the difference between keeping and losing an investment client. In the highly competitive world of money management, more than one manager has contemplated selling his soul for an extra 50 basis points of return.

Descriptions of, and prescriptions for governance problems are widely available, not only for pension funds, but also organizations in general. Ambachtsheer and Ezra (1998) provide an excellent description of the short-comings in pension fund governance structures and procedures, and provide broad guidance on how effective pension boards operate, and what distinguishes competent from incompetent boards. Carver and Oliver (2002) are often referenced as governance gurus for both profit and non-profit organizations. The collective recognition that fund governance practices need to be improved has spawned a cottage industry of governance experts providing governance audits, governance recommendations and governance "best practices" seminars.

⁵ Ambachtsheer, Keith and D. Don Ezra (1998), *Pension Fund Excellence: Creating Value for Stakeholder*, John Wiley & Sons, pp 14-20. The authors refer to the 50 bps as the cost of "a serious excellence shortfall" in fund management.

However, I suspect that many plans that have used the services of governance experts find that the “Promised Land” of governance excellence remains beyond their reach.

As a *bona fide* member of the cottage industry of governance experts, I have delivered my share of excellent reports, insightful recommendations and riveting seminars.

However, I remain frustrated in the inability of many of my clients to translate my efforts into more effective governance structures for their pension funds. At the risk of being accused of blaming my clients for my own shortcomings, I will offer some reasons why many pension plans find it difficult to improve their governance structures. Perhaps the path to more effective fund governance first requires a better identification and articulation of the hurdles governing fiduciaries must overcome before they can do their jobs better.

Seven Hurdles to Better Fund Governance

In this paper, I identify and discuss seven hurdles to better fund governance. More hurdles exist, but in my experience the seven selected are the most prevalent and most obstructive, especially when two or more appear in combination. I have categorized each hurdle as being either organizational or behavioral. Organizational hurdles are common across most types of organizations be they pension funds, professional associations, companies, governments, not-for-profit organizations and even church groups.

Behavioral hurdles are largely confined to organizations that are responsible for managing financial assets, and in particular, financial assets that are held in trust for the benefit of others. Why is responsibility for managing assets held in trust different from managing other assets? Simple – all decisions are subject to the scrutiny and second-guessing of other very interested parties – the plan sponsor, plan beneficiaries, current contributors and the regulators.

Four Organizational Hurdles

Inadequate Understanding: The transformation of contributions into retirement income is driven by financing, investment and organizational principles that are well documented but not always adequately understood by governing fiduciaries. Individuals find themselves on pension boards for a host of reasons – stakeholder representation, independence, political favors, ex-officio status, professional expertise, reputation - but

few of these reasons ensure they arrive with an adequate understanding of the workings of a defined benefit pension plan.⁶ Most members of public sector boards that I have met have volunteered that they accepted the position knowing that they had an inadequate understanding of financing, investment and organizational issues, but expected to learn on the job with the help of incumbent board members, fund investment staff, consultants, investment managers and by being regularly exposed to the issues. Even members appointed for their related expertise and experience often find they are less than fully equipped to address issues because their understanding is often dated, narrow or does not translate well into the specialized world pension management. To be effective, I am not saying governing fiduciaries have to become experts. However, they need to have enough knowledge and understanding of issues to assess and challenge advice critically.

Decision-making suffers when board members do not have and share an adequate understanding of financing, investment and organizational principles. For example, strong disagreements will emerge about how best to solve a given issue because various board members are starting with erroneous and conflicting understandings of one or more very basic principles. If logical individuals start with different premises, disagreement and conflict soon follow. Decision-making suffers in one of two ways. First, pressing issues are often deferred until the impasse is resolved. Second, an incorrect or sub-optimal solution is adopted because of advocacy abilities of a well-meaning but misguided board member.

Inability to separate policy approval from policy implementation: Boards set objectives, approve policies, delegate policy implementation to management, and ensure management is running the business properly. Nothing could be simpler in concept, but few things are more difficult to implement in practice – especially defining, accepting and enforcing clear distinction between policy approval and policy implementation. Most organizations are more likely to achieve their objectives if management is

⁶ This anecdotal observation has statistical support. See Myners, Paul (2001), *Institutional Investment in the UK: A Review*, HM Treasury. Trustees are more often selected because of their accomplishments in other fields, but have little or no background training in pension financing, investment and organizational issues.

unequivocally delegated the responsibility, and accountability for the successful implementation of approved policies, subject to board-imposed limitations.

From an asset management perspective, boards are accountable for making two big risk and return decisions: asset mix policy and active management policy.⁷ By setting asset mix policy, boards are expressing a view about what portion of fund assets can be “put at risk” in order to earn a capital market return premium. When setting active management policy, boards are expressing a view about how many additional assets they are prepared to “put at risk” in order to earn additional returns from active management decisions. Once the asset mix policy decision is made – almost all boards delegate the implementation of the funds asset mix policy to the managing fiduciaries, subject to rebalancing rules and require periodic reports to confirm the funds asset allocation has been managed within the specified ranges.

However, many boards do not have the same ability to separate the approval of an active management policy from its implementation. There boards believe that their fiduciary duty can only be fulfilled if they accept the responsibility for implementing the fund’s active management policy by deciding which active investment managers to hire and fire. Their decision-making may rest heavily on the guidance and recommendations their staff and consultants, but they make the final decision in the very same way they make the final decision about asset mix policy.

Why is it inappropriate and probably counter-productive for board members to try and implement a fund’s active management policy by hiring and firing the fund’s investment managers? Here are three reasons. First, board members seldom have the time, expertise or experience to evaluate alternative managers with any rigor and therefore cannot make truly informed decisions. As a result, most board members are forced to distinguish among short-listed candidates by past performance and presentation panache, both very poor predictors of future performance. Second, the short-list of managers from which board members pick the successful candidate have be pre-screened by their staff to

⁷ Beneficiaries are probably better served if governing fiduciaries see themselves as risk managers, not investment managers. “Boards manage risk; management adds value” is useful mantra to open every meeting of governing fiduciaries.

such an extent that board members are really picking among managers that staff believes will do a good job. Given that staff has already effectively made the manager selection decision, why should board members assume accountability for the outcome of what is a staff decision. This simply muddies accountability between board and management, and ambiguous accountability is a clear indicator of an ineffective governance structure.⁸ Third, board and staff will inevitably at times disagree over terminating a manager that has delivered poor performance record. Board members see underperformance and management sees a skilled manager whose strategy or style is simply out of favor and will bounce back with benchmark beating returns. Disagreements such as this can sew mistrust between governing and managing fiduciaries, with the board questioning management's competence or even the nature of the relationship with the underperforming manager, and management's corresponding sense that the board doubts its competence and objectivity.

Poorly designed Board performance reports: The performance reports used by most boards to monitor and evaluate investment returns and investment risk generally provide too much data, too little information and what information they do provide is usually misleading because of an excessive focus on peer-relative performance. Faced with this constellation of often disjointed data, governing fiduciaries look for data they can most easily understand, make comparisons that seem logical and draw conclusions about the success or failure of a pension fund's investment policies. Performance reporting has evolved over the years in an ad hoc fashion responding to the diverse needs of a host of market participants, each driven by a different agenda. Adding to the profusion of reporting formats is the ever-decreasing cost of computing power that encourages suppliers to produce yet another set of reports, exhibits or diagrams.

Confused or confusing performance reports result in confused or confusing decision-making by governing fiduciaries. Redesigning performance reports so that they meet the

⁸ Muddled accountability has some attractive features. If accountability is ambiguous, then no one person or group "owns" a bad outcome. Ambiguity allows groups of individuals to manage and deflect blame, which presumably avoids professional embarrassment and manages career risk. In fact, two social anthropologists have concluded that many US pension plans organize themselves to manager and deflect blame. See O'Barr, William and John Conley (1992), *Fortune and Folly: The Wealth and Power of Institutional Investing*, Business One Irwin.

explicit needs of governing fiduciaries and are also easy-to-understand will go a long way to improving fund governance. If there is any truth to the axiom “what gets measured, gets managed”, then board members should demand and receive reports that clearly, crisply and accurately answer two questions that should be upper most in every fiduciary’s mind:

1. Are plan assets being prudently managed?
2. Are plan assets being profitability managed?

If these two questions are the primary focus of board reports and become the basis upon which board members evaluate management’s ability to implement approved investment policies, governing fiduciaries have a reporting framework that ensures management’s implementation decisions and beneficiary interests are aligned. If either question cannot be answered affirmatively by each board member, the reporting format compels the board to call management to account, and if necessary, undertake corrective actions.

Ineffective Directors of Investment: Directors of Investment (DI) or Chief Investment Officers (CIO) are pivotal to the success of an investment program, particularly in public sector pension plans. Ineffective DIs mistakenly believe they should respond rather than lead, and therefore wait for direction from the governing board. Given that most boards are populated by members with an inadequate understanding of pension financing, investment and organizational issues this is tantamount to having blind person lead the sighted through an unfamiliar maze. Ineffective DI’s also fail to have the board distinguish clearly between policy approval and policy implementation, and do not push aggressively to be delegated the necessary decision rights and accountability for implementing board policies.

Taking a cautious and non-leadership role is not an unrealistic strategy for many DIs of public sector pension funds. Public sector investment Boards can be a hot-bed of conflicting political agendas and trying to exert investment leadership can be a career limiting strategy.

Effective DIs have firm and thoughtful views on what makes an investment program successful and implements their ideas by hiring and managing the right investment staff,

and by communicating his/her ideas convincingly to governing fiduciaries and managing their expectations accordingly. Given that many board members have inadequate understanding of pension financing, investment and organizational issues, most welcome the guidance of a pro-active DI, especially one that listens, responds and, when necessary, disagrees constructively.

Finally, an effective DI exhibits a personal stake and passion for the investment process he/she has implemented to achieve the investment objectives established by the board. When there is board turnover, the effective DI becomes the intellectual fly-wheel that ensures a fund's investment processes continues to run smoothly.⁹ The DI reviews with each new board the rationale for the way assets are being managed and being candid forthright what is working well, what is performing below expectations, and what corrective actions are likely to be needed.

Three Behavioral Hurdles¹⁰

Inability to Specify Risk Tolerance: Risk tolerance – the measure of an investor's willingness to accept a higher probability of loss in exchange for an increase in expected return – is a pivotal parameter in all investment decisions, and is perhaps the most difficult metric for investors to specify, be they individuals or investment committees. Without a clearly articulated statement of risk tolerance investors will inevitably adopt unsuitable investment policies and strategies, either because they are unknowing too risky or insufficiently risky. Investors also find it difficult to evaluate short-term investment performance objectively, be it good or bad performance, and then formulate and implement suitable investment responses.

⁹ Turnover of public sector trustees can be significant. John Por of Cortex Applied Research Inc, a Toronto-based consulting firm specializing in fund governance, observed an annual 25% trustee turnover rate among his 75 clients. This equates to a whole new board about every four years. See Por, John T, (2003), "Board Governance and the CIOs", *Consultant Connection*, www.investorforce.com, First Quarter.

¹⁰ The new field of behavioral finance has provided many examples of human errors in decision-making that stem from perceptual illusions, overconfidence, over-reliance on rules-of-thumb, emotions and incorrect framing of problems and solutions. The behavioral hurdles discussed in this section can be explained by one or more of the psychological phenomena documented by behavioral economists. See Shefrin, Hersh (2002) *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*, Oxford University Press.

All investors find it difficult to articulate their risk tolerance but pension fund trustees arguably face a unique combination of challenges. First, they must reach a collective expression of risk tolerance on behalf of not only the plan beneficiaries but also the plan sponsor, whose risk-tolerances are seldom coincident. Second, because plan trustees are seldom directly affected financially by success or failure of the investment program they authorize. This means the process of reaching a consensus risk tolerance can easily become an academic trade-off between risk and return. Third, risk tolerances are dynamic and change not only with changing economic environments, but also with changes in board membership, funded status of the plan and the financial health of the plan sponsor. Fourth, statistical measures of risk and return provided by the asset and liability modeling studies undertaken by trustees cannot convey the emotional pain and regret that accompanies the actual realization of disappointing investment scenarios. Disappointing outcomes are clinically described as below median results, and very disappoint scenarios are described as “very-low probability single-path events”. Finally, and perhaps most significantly, governing fiduciaries tend to under-estimate their collective risk tolerance – both with respect to setting a fund’s asset mix policy, and a fund’s active management policy. Positive and negative outcomes of equal magnitude are usually accorded the same emotional weighting when viewed as statistical exercise. However, in reality, the emotional disappointment endured when actually living through a negative outcome is often more than twice the emotional satisfaction enjoyed from a positive outcome.¹¹

In the absence of a crisp and robust articulation of risk tolerance, how do governing fiduciaries make risk-return policy decisions? Many look to see how their peers in other pension funds have answered the same questions, and then adopt similar policies. This is a reasonable approach given that prudence is often judged within the context what others investors do when faced with the same similar circumstances. However, there is no guaranty that industry-norm investment policy is best policy for all public sector pension plans. Trustees should adopt an investment policy only after full consideration of the

¹¹ Based on a presentation on behavioral finance by Professor Daniel Kahneman at the Russell Investment Sales Conference, April 2003.

particular circumstances facing the plan for which they have fiduciary responsibility. This includes liability structure, funded status, management resources and the ability of the sponsor to underwrite poor investment performance if it should materialize.

Others seek the guidance of their investment advisors in the believe that their advisors experience and expertise gives them a better understanding to what extent pension plan assets should exposed to investment risk. Advisors certainly provide governing fiduciaries a thoughtful framework for understanding and evaluating risks, but few advisors are willing to assume the responsibility for specifying their client's risk tolerance. Advisors are seldom in command of all the factors that help trustees evaluate their risk tolerance, and the experienced advisors recognize that risk tolerance ebbs and flows in response to a host of events including board turnover and stock market cycles. Nonetheless many governing boards adopt the risk preferences on their advisors; the adoption process is subtle and often unrecognized by both parties. If the risk preferences of the board and the advisor are a good match, then future investment experience – good and bad – will viewed in proper context. However, if risk preferences are mismatched, future problems are inevitable. The advisor will be blamed for any bad news, either in terms of “the fund lost too much money in bad times”, or “didn't earn enough money in good times”.

Over-Reliance on Past Performance: That past performance is an unreliable predictor of future performance is an investment principle is almost universally understood and accepted by governing fiduciaries. But paradoxically, past performance is frequently the principal criteria used by governing fiduciaries when they are hiring or firing individual investment managers, evaluating the success or failure of investment strategies, including asset mix and active management strategies. This paradoxical behavior affects all investors to some extent, even the most expert and experienced, but it is legendary among governing fiduciaries. Succumbing to the “past performance” temptation results in excessive and expensive turnover of investment managers, and the more expensive and more counterproductive turnover of investment policies and strategies.

Why this contraction between what investors know, and what investors do, especially among governing fiduciaries? Past performance is easy to measure, cheap to buy, easy to

explain and easy to understand. It is also widely available and regularly referenced by industry participants including governing fiduciaries, investment managers, investment consultants and beneficiary groups. We are all subject to the temptation of equating a good outcome, with a good strategy; and a bad outcome with a bad strategy. We forget, or do not fully appreciate, that the long-term value-generating aspects of most investment returns series are swamped by the randomness over shorter timeframes, the same timeframes fiduciaries use to evaluate investment performance. Finally, not taking action when a manager or strategy is underperforming can result in heavy pressure on governing fiduciaries by external but less well-informed parties. Better to be complimented for making a decision based on unreliable past performance data, than enduring the criticism for sticking with a good manager or good strategy that is underperforming.

Despite its well-known flaws, past performance will continue to have appeal among governing fiduciaries because the alternatives are usually more expensive and are not foolproof. For example, in-depth manager research may have a better record for predicting future performance, but this approach requires a significant commitment of investment in quantitative tools and experienced investment professionals. And perhaps most importantly, these other approaches may not sufficiently predictive over fiduciary-relevant time horizons. For example, if a research process is able to consistently identify superior managers 55% of the time over quarterly time periods, this would be a very good outcome. An investor would simply have to continue hiring from this pool of managers and over long time periods the favorable odds would produce above benchmark returns.¹² However, there is still a significant chance over shorter time periods that performance would be disappointing because 45% of the recommended manager pool underperformed. Given that many governing fiduciaries have investment time horizons of five years or less, the statistical attractiveness of a 55% success rate loses much of its appeal.¹³

¹² About 55% of Russell “buy-ranked” managers outperform their benchmark each quarter. If this 5% edge is sustainable, the odds of earning above benchmark returns over a ten-year periods is very high. Ezra, D.D. (1998), “Adding Value Through Active Manager Selection and Structure: Documenting Russell’s Experience”, *Conversation Piece*, Frank Russell Company.

¹³ Ilkiw, J., (2000), “Typical Time Periods Over Which US Plan Sponsors Evaluate Fund and Manager Performance”, *Consulting Practice Note*, # 3, Frank Russell Company.

Tacit Conspiracy of Over Optimism: Various factors combine to instill in the collective mind of trustee performance expectations for active management that are unreasonably optimistic. These unrealistic expectations are then used as criteria for evaluating investment performance and, inevitably, this produces unproductive and costly turnover of active managers and active strategies. Four factors conspire to establish unreasonably optimistic performance hurdles for active management – one is statistical and three are behavioral.

The statistical factor is the upward drift in the quartile breaks of a sample of active managers relative to a broad market index, such as the Russell 3000 or Wiltshire 5000 for active US equity managers. This upward drift makes the value-added returns from active management seem larger than if the sample was corrected for survivor and backfill bias. Survivor bias refers to the phenomena of underperforming managers being dropped from the sample, leaving in the sample only those managers that have performed well. Over longer time periods, the quartile breaks increasingly measure the value-added of a diminishing number of surviving or successful managers, and are no longer representative of the full community of active managers. Backfill bias refers to the upward shift in quartile breaks if a manager's return history is back-loaded into an exiting sample. Why should this produce an upward bias? Only managers with good track records are motivated to submit historical returns.

The three behavioral factors are the understandable desire of trustees, investment managers and consultants to help a pension fund earn additional returns from active management. Trustees want higher returns to grow pension assets and are always on the look out for additional sources of return, and can always find a manager or strategy that has a great historical track record to reference as an achievable and reasonable yardstick. Investment managers reinforce this trustee optimism with their ability to highlight those return periods and performance statistics that cast their track record in the best light. Investment consultants provide the third source of reinforcing optimism. They are hired by trustees to provide expert investment advice on investment strategies and manager selection, and want to provide advice that meets their clients' expectations. Little is gained by trying to moderate client expectations when trustees, investment managers and competing consulting firms are expecting or selling higher performance expectations –

many of which can be supported by pointing to selective performance histories, or flawed samples of historical returns.

Governing fiduciaries would make better decisions if the performance criteria used to evaluate outcomes were recalibrated to better represent the upper and lower bounds of what is reasonably achievable for broadly diversified actively managed individual portfolios, and broadly diversified total fund investment programs. Recalibration is not a “code word” for lowering expectations to making life easier for investment managers and investment staff. It is a tactful way of asking investors to be more realistic about what is achievable, rather than uncritically and optimistically accepting what is being sold. For example, a total fund excess return target of 50 basis points net of fees may look disappointingly small and not worth pursuing to many governing fiduciaries, but maybe this is because they are harboring unrealistically high performance expectations.

How significant is 50 basis points of excess return? Very significant when one considers that a fifty basis point excess return on a 60/40 equity-debt asset mix policy provides the same expected return as a much more risky passively implemented 75/25 equity-debt policy.¹⁴ From this perspective, 50 basis points excess return is equivalent to have 15 percentage points more policy exposure to equities, but without the concomitant increase in systematic risk. Over the long-term, 50 basis points of increased return lowers long term pensions by about 7.5%.

PART IV: TRUSTEE-FOCUSED REPORT FOR MEASURING AND MONITORING FUND PERFORMANCE

To determine if fund assets are being profitably managed, fund and manager performance must be evaluated against established objectives and benchmarks. The

¹⁴ This assumes equity has an expected 300 basis point risk premium over bonds. Each 10% increase in equity exposure increases total fund expected return by 30 basis points. A 50 basis point excess return from active management on a 60/40 equity-debt policy has the same expected return as a 77/23 equity-debt policy. Experience has shown that well diversified active management programs do increase total fund risk. The risk of active management is the deadweight loss of returns – not an increase in total fund volatility.

three-panel format illustrated in Figure 5 answers the three performance questions that should be uppermost in the minds of governing fiduciaries:

1. Has investment performance affected benefit security?
2. Has the asset-liability mismatch been rewarded?
3. Have assets been cost-effectively managed?

Comparing a plan's total fund return with its funding discount rate indicates how benefit security has been affected by investment performance. Benefit security is improved when the total fund return exceeds the funding discount rate and vice versa. In this example, the 6.76% three-year annualized return was below the 8.00% discount rate by 1.24%, thus lowering the plan's funded ratio (assets divided by liabilities), and negatively affecting benefit security. This comparison excludes the favorable or adverse impacts that various non-investment factors have on a plan's funded ratio including benefit changes, salary growth, mortality experience, termination experience and retirement rates. Governing fiduciaries should also monitor a plan's solvency ratio during periods of declining interest rates. This format can incorporate solvency ratio monitoring.

All plans have a minimum risk portfolio, that combination of assets that best matching the year-to-year changes in plans liabilities. This is usually a combination of investment grade long-bonds, both nominal and real. Subtracting the return of the plan's policy portfolio from the minimum risk portfolio reveals if the authorized mismatch of assets and liabilities has been rewarded. In the example presented, we have assumed the plan's minimum risk portfolio is represented by an all-T-bill portfolio. The 5.88% policy return exceeded the 5.22% T-bill return by a modest 0.66%. Over the long-term, investors expect to earn a significant premium over T-bills, but over shorter periods the return differences between the minimum risk and risky policy portfolio can be negative, and at times very negative.

(Note that the policy return is the return that could have been earned by investing in the plan's asset mix in indexed portfolios. It is the return earned from the capital markets before the impact of active management decisions. This corresponds to the "no brainer" sage I asset allocation introduced in Part II of this paper.)

The difference between a plan's actual return and its policy return measures the contribution of active management decisions. In this example, active management decisions added 0.88% over the three-year measurement period. By subtracting active management investment fees, the net impact of asset management decisions on total fund returns can be estimated. This net value-added return measures the cost-effectiveness of asset management decisions at the total fund level. Performance attribution unbundles value-added into its asset mix management and security selection components. The negative 0.5% return suggests the strategies or procedures used to manage the fund's asset allocation exposures should be examined.

The three-panel report does not compare the fund's investment performance relative to the performance of other pension funds because comparisons of total fund returns does not adjust for different asset mix policies, and therefore provide potentially misleading information. This is not to say that governing fiduciaries should ignore comparative performance measurement, but should use such measures to address secondary questions. For example, total fund return samples may help explain why a fund with a non-median asset mix policy may be performing significantly above or below their public sector peer group.

This three-panel report provides governing fiduciaries with an easy to understand consolidated view of total fund performance relative to established objectives and expectations, and makes clear the accountability for different sources of return. With this format, time-pressed governing fiduciaries can determine how investment performance has affected benefit security and if fund assets have been cost-effectively managed. They can also easily spot problems that may require changes in policies, procedures or agents. It also provides a convenient and self-explaining format for reporting investment performance to plan sponsors and plan beneficiaries.

Concluding Remarks

The process of developing, deciding, implementing and managing investment policies in many U.S. public sector plans undoubtedly falls short of the high standards contemplated in state and federal pension legislation. This should not be too disconcerting to regulators, plan members or pension fiduciaries because perfection in any organization is

impossible to achieve. What should be disconcerting is that many pension funds – both private and public – are governed by honest and well-meaning individuals who unfortunately have a limited or poor understanding of pension financing, investment and organizational principles.

Are fund assets in public sector pension funds exposed to extraordinary risk of loss because governing fiduciaries may be inexperienced or unqualified? In general, the answer is “no” because pension assets are protected from undue risk of capital loss by two very effective lines of defense. The first is the entrenched industry practice of diversifying investment across asset and within asset classes. Diversification is the cornerstone of modern investment practice and provides significant protection from poor governance by reducing a fund’s exposure to any one investment decision. The second line of defense is the integrity, professionalism and experience of the various internal and external agents that supply services to pension funds. This includes the investment staff, actuaries, investment managers, lawyers, auditors, custodians and consultants. While these agents will maximize their salaries and fees for services rendered, the vast majority also work in the best interest of plan members and beneficiaries. However, if either of these lines of defense is breached, plans are exposed to undue capital losses.

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Table 1		
Sources of Asset for U.S. Retirement System, 2001		
Source	\$ Trillion	% of Total
Private Sector (DB)	1.85	17
Private Sector (DC)	2.11	20
Private Insured	1.34	13
State and Local Government	2.18	20
Federal Government (civilian and military)	0.81	8
IRA and Keogh	2.40	22
Total	10.69	100

Source: "An Evolving Pension System: Trends in Defined Benefit and Defined Contribution Plans", *EBRI Issue Brief*, Number 249, September 2002.

Table 2	
Ten Largest U.S. Employee Pension Funds, 2001	
September 30, 2001	
Fund	Assets (\$ Billions)
1. California Public Employees	143.7
2. New York State Common	106.1
3. California State Teachers	95.5
4. Florida State Teachers	88.5
5. Texas State Teachers	75.1
6. New York State Teachers	74.9
7. New Jersey	65.5
8. General Motors	64.6
9. New York City Retirement	54.5
10. Wisconsin Investment	54.5
Total	822.9

Source: Pension & Investments, *The P&I 1000*, January 21, 2002.

Figure 1
Generic Asset Allocation Decision Process

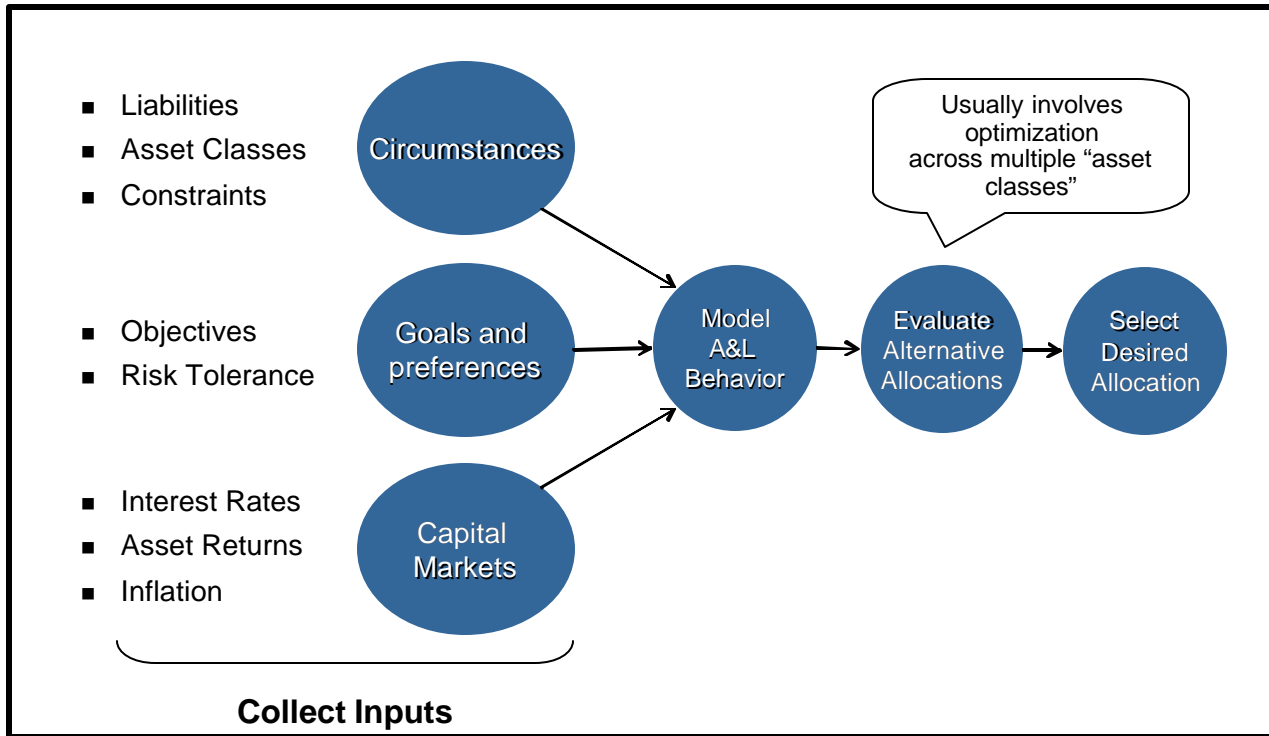


Figure 2
 Generic Two-Stage Asset Allocation Decision
 Process

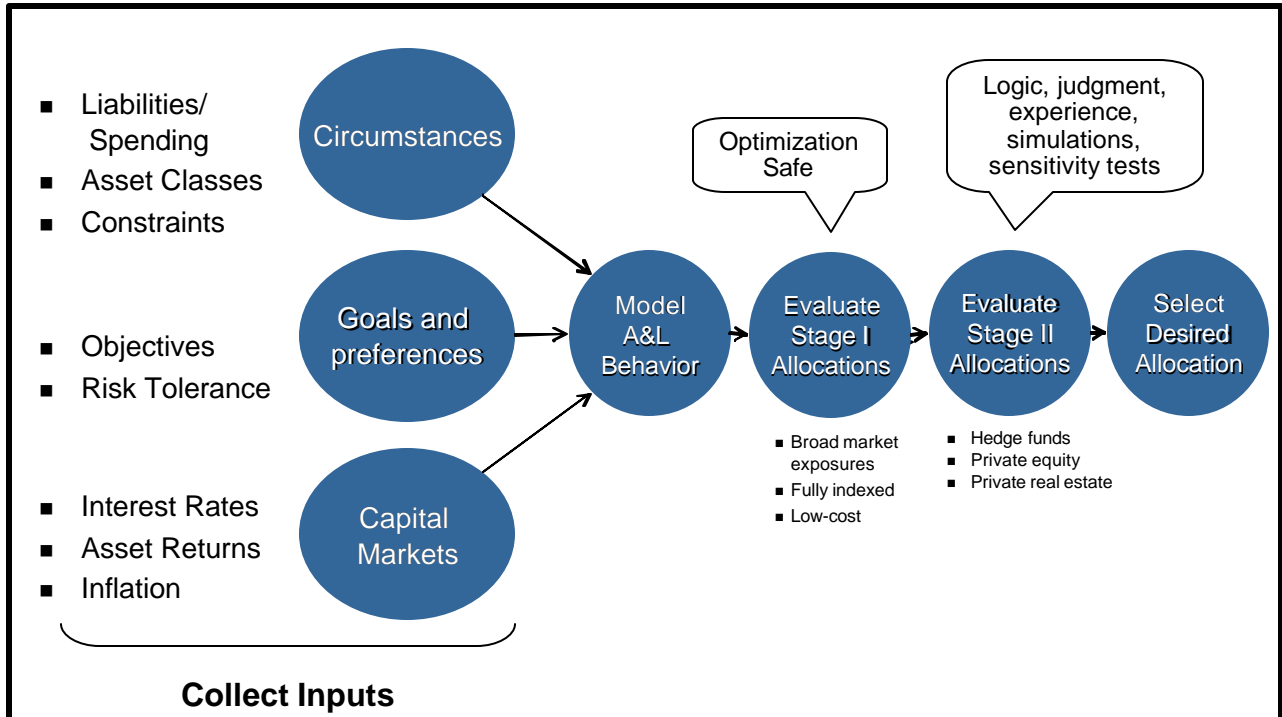


Figure 3
Decide Asset Allocation In Two-Stages

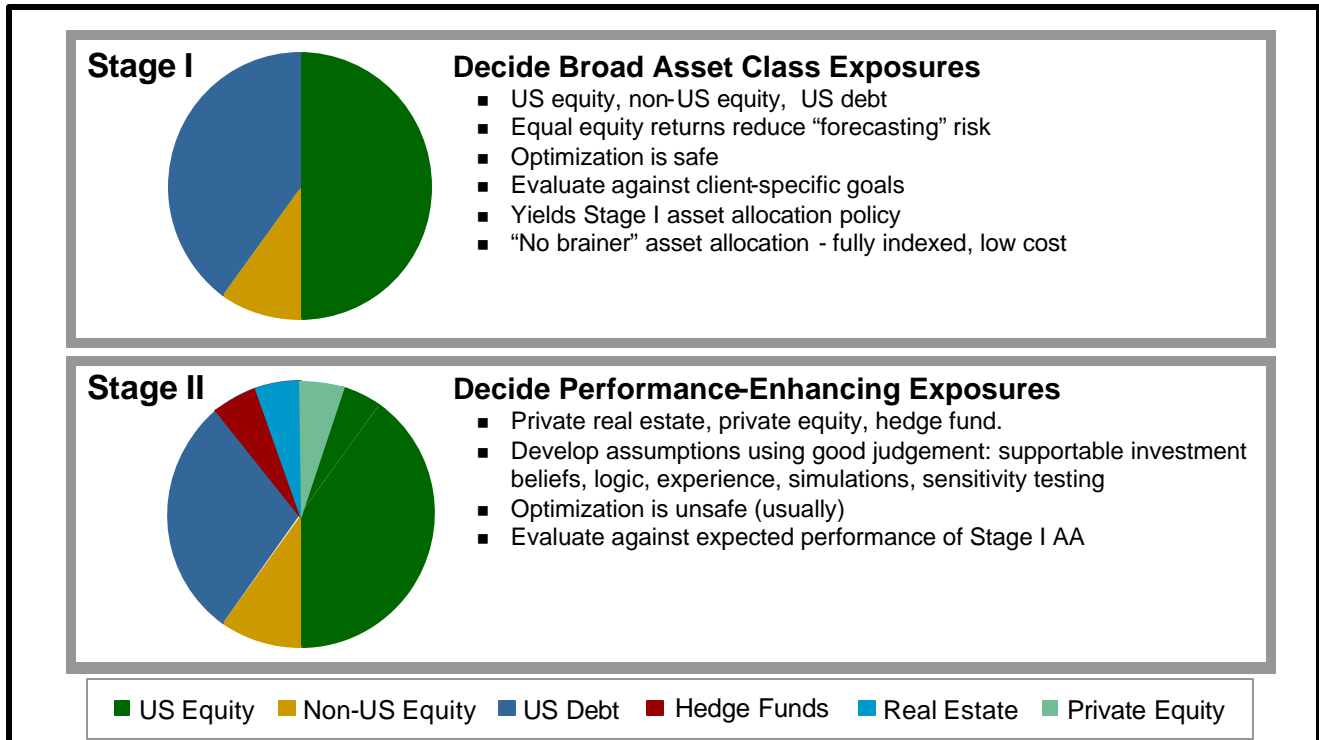


Figure 4
Two-Stage Asset Allocation Clarifies Projected
Impact of Performance Enhancing Strategies

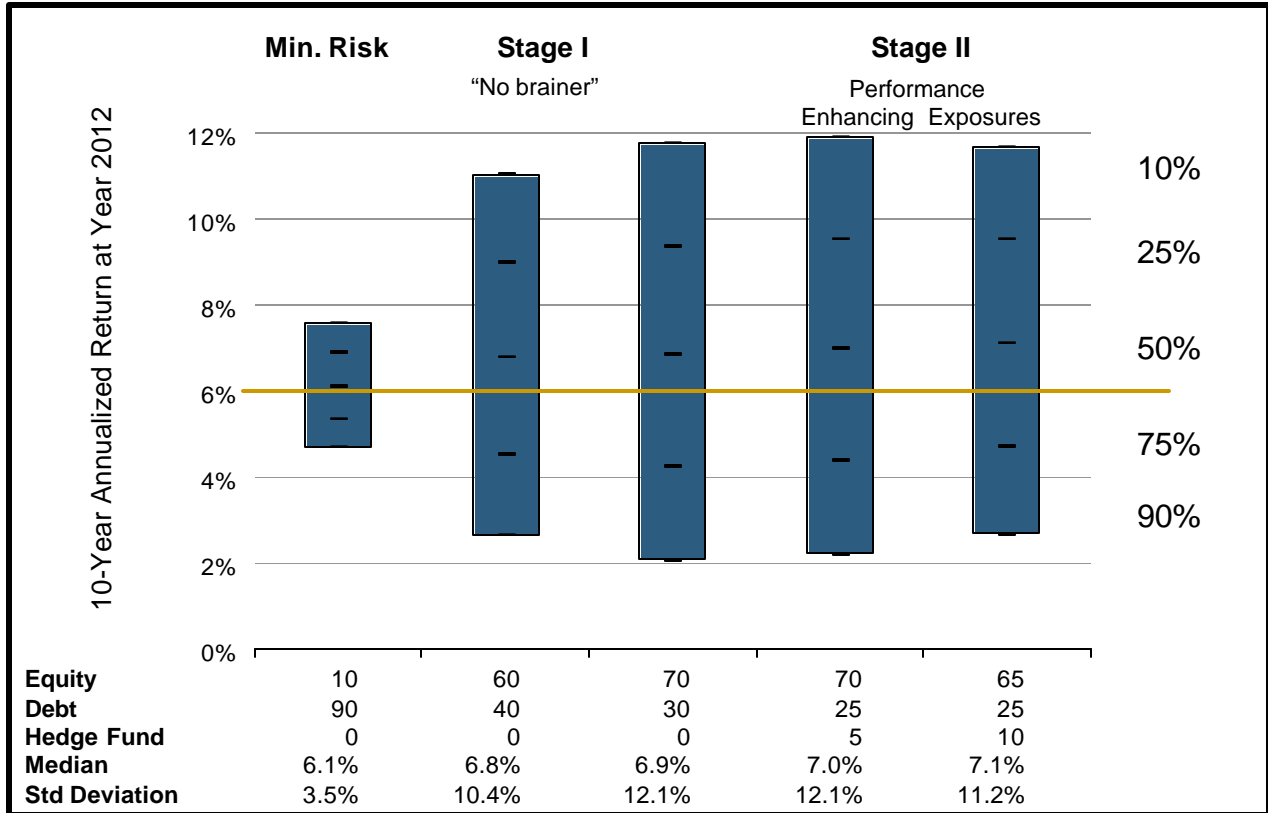


Figure 5

Three-Panel Trustee-Friendly Performance Report

<p align="center">XYZ Total Fund Performance Report Three-year Returns, Ending September 30, 2001</p>		
<p>Have returns affected benefit security?</p> <p>1. Total fund actual return 2. Actuarial discount rate 3. Out-performance (1-2)</p>	<p>(%)</p> <p>6.76 8.00 (1.24)</p>	<p>Funded ratio declined; return below funding discount rate.</p>
<p>Has plan been rewarded for A&L Mismatch?</p> <p>4. Total fund policy return 5. Minimum risk/high cost policy of 91-Day T-Bills 6. Impact of asset mix policy (4-5)</p>	<p>5.88 5.22 0.66</p>	<p>A&L mismatch rewarded.</p>
<p>Has assets been cost-effectively managed?</p> <p>7. Active management effect (1-4)</p> <p style="padding-left: 40px;">Security Selection Asset Mix Management</p>	<p>0.88 1.00 (0.22)</p>	<p>Added value Added value Subtracted value</p>

-end-