PERAC

INVESTMENT

Best Practices

Manual

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LETTER FROM THE EXECUTIVE DIRECTOR

August 22, 2007

During the course of the last several years, the Massachusetts' public pension systems and the boards that manage those systems have been under increasing scrutiny. At the same time, the management of these multi-million dollar enterprises has become more and more complex. The Public Employee Retirement Administration Commission (PERAC), in conjunction with its Reform Initiatives Advisory Committee, conducted a review of the statutory and regulatory environment in which these boards operate and submitted recommendations to the Legislature. In addition, the Advisory Committee advised PERAC that "best practices" should be developed and published to provide the boards with information on how best to manage their operations, exercise their investment functions, and generally carry out their fiduciary duty.

This is the first publication of "best practices" that has been developed and disseminated in response to that recommendation. The focus of this best practices manual is investment. Boards are responsible for the investment of billions of dollars of assets and in light of the importance of that responsibility, the Commission believes it is most appropriate that the initial manual cover this vital topic.

These reports have been prepared by PERAC's Investment Director Bob Dennis. Bob has put together a comprehensive and understandable set of principles that should assist board members as they grapple with their day-to-day investment responsibilities.

We hope that this is helpful to boards and look forward to issuing more best practice manuals in the future.

Sincerely,

Joseph E. Connarton

Joseph E. Connarton
Executive Director

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A reasonable overall goal for a retirement board is that its assets should be both preserved and enhanced, in real as well as nominal terms, by achieving the highest level of performance compatible with risk tolerance and prudent investment practice. There are a number of pertinent benchmarks a board should use to assess the success or failure of its investment program:

1) Performance relative to **asset allocation** and **policy** targets

Reflecting the system's asset allocation policy, actual returns should meet or exceed a hypothetical return comprised of a weighted average of the policy targets applied to the respective benchmark returns for a particular period. By comparing the portfolio's performance to a passively managed proxy, the board is able to measure the contribution of active investment management and policy implementation. An allocation return will differ from the policy return if the board's existing asset allocation is not consistent with its long-term policy target.

2) Relative to **inflation**

Since inflation is the primary driver of benefits and other pension costs, and in order to protect and enhance the purchasing power of system assets, a portfolio objective should be to provide a real rate of return that exceeds the expected rate of inflation by a certain increment, usually at least 3-4% annually.

3) Relative to **actuarial rate**

In order to avoid actuarial losses that could affect future funding rates, systems should aim for returns that achieve or reasonably exceed their actuarial rates of return. In order to discourage systems from taking an inordinate amount of risk, current PERAC regulations call for systems to establish a rate of return objective that does not exceed the actuarial rate by more than 1%. Boards should also understand the risks inherent in having portfolios that assume an unreasonably low amount of risk.

4) Relative to **peer groups**

Since under-performance or out-performance relative to financial market benchmarks may not be a fair judge of investment management skill during certain periods, it is appropriate that managers be evaluated relative to similar style managers and that retirement systems be compared to other systems that have similar characteristics and overall objectives.

Boards should expect returns to consistently rank in the top 50% among Massachusetts public retirement systems as well as various national public fund universes. During periods when the PRIT Fund is doing exceptionally well, it may be appropriate to limit in-state comparison to the non-PRIT systems. In comparing performance to that of other public plans both within Massachusetts and outside the state, the board should recognize that other plans may have substantially different investment objectives based on their funding status, risk tolerance, and other factors.

Boards should realize that short-term deviations from these objectives may occur. When they do, the most important action is to determine and understand the reasons for the underperformance. While short-term results should be reviewed and remedial action taken if in the best interests of the system (i.e, after concluding that significant changes in asset allocation, or in the roster of managers, is necessary), results should generally be viewed in a 3-5 year horizon.

II Fundamental Choices

Before embarking on the course of setting basic strategy, determining asset allocation, and hiring investment managers, public retirement systems in Massachusetts must start with addressing the fundamental question of whether they will invest on their own or whether they will invest either totally or partially in the PRIT Fund.

There are several reasons why a board may decide to invest on its own. Among them:

1) Strong belief in the tradition of independent, local control.

2) The board's funding ratio might justify a more conservative asset allocation than PRIT's.

3) The board is not comfortable with PRIT's asset allocation, which currently has above-average holdings in nontraditional asset classes.

4) The board has had an above-average record of performance relative to other local Mass systems.

5) Based on (4), the board is confident in its ability to select and monitor managers.

6) The board acknowledges and embraces the hard work necessary to oversee a successful investment program.

7) The board is fully engaged in investment matters and is both willing and able to make tough, well-informed decisions.

8) The board has worked well with and has comfort and confidence in its investment consultant.

9) The board has consistently attained its actuarial return target.

10) The board has in-house investment staff.

There are also several reasons why a board should seriously consider investing in the **PRIT Fund**. Among them:

1) Consideration of PRIT's long-term performance record both in comparison to the local Massachusetts public retirement systems and to other large US public funds.

2) Belief that PRIT's size allows it access to asset classes otherwise unattainable.

3) Belief that PRIT's size allows it access to top tier managers that are generally inaccessible to smaller systems, particularly managers in nontraditional asset classes.

4) Recognition of PRIT's professional investment staff and consultant.

5) Consideration of PRIT's cost-effective structure.

6) Comfort with PRIT's client service capability.

7) Board is relieved of monitoring responsibilities, giving more time for other matters.

8) Board is essentially not confident in its ability to make tough, well-informed investment decisions.

9) No long-term commitment is required, in the event that the structure and strategy of PRIT is substantially changed in the future.

As noted, retirement boards must first choose between investing on their own and investing totally in the PRIT Fund. Boards that choose to invest on their own also have the option of deciding to invest in one or more of **PRIM's segmented offerings**. Boards that consider PRIM's segmented offerings do so with an acknowledgement that there are benefits to having asset allocation as diversified as possible and that they themselves might be too small in terms of assets under management to efficiently invest in asset classes such as emerging markets, real estate, timber, alternative investments, and hedge funds and to gain access to top-tier managers in those asset classes. (With regard to hedge funds, PERAC regulations do not allow systems below $250 million to invest on their own.) Boards will take note of PRIM's strong track record in investing in these alternative asset classes. PRIM also offers segments in domestic equity and in fixed income for those systems that choose not to invest on their own in these areas.

Most boards that invest on their own will do so with the assistance of an **investment consultant**. Retention of a consultant is not required by PERAC but it is recommended. For boards that do not have in-house professional investment staff, consultant expertise can be essential for performing asset/liability studies, presenting alternative asset allocation structures, and for overseeing the hiring, monitoring, and termination of investment managers. For small boards, it is possible that the costs of a consultant may be significant relative to their budgets and that they may not believe that the benefits of a consultant justify the costs.

For boards that do hire investment consultants, it is essential to be assured that the consultant has no conflicts of interest (such as financial ties to investment managers, brokerage firms, etc.) that may affect the objectivity of the firm's recommendations.

For boards that invest on their own, there will be many more choices to make. Foremost among them will be to what extent to utilize **passive** rather than **active management** for publicly traded securities. Active management is clearly more costly in terms of management fees, but it does offer the opportunity for outperforming the benchmark (with the attendant risk, of course, of underperforming it). Passive management, or indexing, is significantly less costly and recognizes that, over time, most investment managers are unlikely to beat their benchmarks. The case for indexing is particularly strong in markets like large cap equity, that are seen as very efficient, reducing the likelihood of managers identifying undervalued securities and sectors. PERAC has no guidelines or policies regarding the use of active vs. passive strategies. In recent years, another option has evolved, known as **enhanced indexing**, where a manager will follow a basic indexing strategy but will make opportunistic but risk-controlled over-weightings or under-weightings.

For asset classes where active management is chosen, boards will have many other decisions to make in terms of actual portfolio strategy in those asset classes. (See section on "Manager Guidelines). When working on the investment guidelines for their active managers, boards must decide how much leeway to allow in terms of deviation from the benchmark's style (i.e., growth vs. value), sector or industry diversification, duration (weighted average bond maturity), and other factors. Boards may insist on factor neutrality in some areas while allowing opportunistic bets in others.

Boards will often have to choose between commingled funds and separately managed accounts offered by investment managers. Among the several factors to be considered in such decisions are the respective fees. Fees are usually but not always lower for commingled funds.

Investment in most nontraditional asset classes, involving non publicly-traded investments, also involves fundamental choices. The decision to invest in the asset class known as **"alternative investments"** requires, first of all, an understanding that, in contrast to basic equity and fixed income investments, the investment will be: illiquid (usually 10-15 year commitment), volatile (about twice the volatility of public equity), risky (possibility of more substantial gains or losses), expensive (high fees, drawn against committed capital, may result in early negative returns), difficult to value (could be understated or overstated pending actual exits or liquidity events for underlying companies), and passive (limited partners have little influence). There are at least two different types of investment under this umbrella: 1) private equity, which could involve buyouts, mezzanine financing, or special situations, and 2) venture capital, where partnerships may vary by stage of investment (early, mid, or late stage), industrial diversification, and size of companies. For Massachusetts public retirement systems, the choices for investment in this asset class include conducting searches for separate partnerships or fund of funds or investing in the PRIT Alternative Investment annual "vintage" segments.

While the asset class is considerably less volatile and risky than alternative investments, **real estate** partnerships have many of the same characteristics. For institutional investors, there are two very different ways to invest in real estate. First, there are publicly traded pooled investments known as Real Estate Investment Trusts. This is a relatively small segment of the entire market and its basic characteristic is that, with shares freely trading on

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the exchanges, performance, at least in the short run, may significantly differ from the fundamentals of the underlying real estate investments. Second, there is private market investment, where investors face choices in strategy ("core", representing established, highly occupied properties or "value", representing opportunistic situations), type (apartments, office, industrial, retail, hotels, etc.), and geographic region. Once again, retirement boards have the option of investing on their own through separate accounts (usually restricted to large systems), commingled funds, funds of funds, or the PRIT Fund segment (which combines private holdings with REIT investments.)

In **hedge funds**, the first task for potential investors is to receive sufficient basic education on this very challenging asset class and to decide whether investment is warranted. For systems that choose to invest, current PERAC guidelines only allow those systems with assets greater than $250 million to conduct searches on their own and these systems are restricted to investing in fund of funds rather than separate hedge funds. The guidelines also have restrictions pertaining to underlying strategies and to diversification. Boards with less than $250 million may invest in hedge funds through the PRIM Absolute Return segment. For boards that invest on their own, decisions still need to be made as to whether to focus on large vs. small products, older vs newer products, strategy composition, etc. Whether through the PRIT segment or by investing on their own, systems can currently allocate up to 10.0% of portfolio assets in hedge funds/absolute return.

In recent years, strategies have begun to evolve that meld some of the characteristics of hedge funds to traditional long-only management. One increasingly popular strategy in equity investing is **130/30**, which uses both leverage and shorting. Portfolios may hold short positions up to 30% of its net value and hold additional long positions up to the same amount. While the portfolio maintains 100% net exposure to the market, it has gross exposure of 160%, enabling the manager to make more significant bets relative to overweighting and underweighting particular stocks. Using the supplementary regulation process to authorize the shorting and/or leveraging that may be involved in such strategies, several systems have received PERAC approval to commence 130/30 strategies and other enhanced and/or structured portfolios.

As of July 31, 2007, thirty-one of the 104 local Massachusetts public retirement systems have allocated all their investment assets to the PRIT Core Fund. Forty-eight systems have invested in one or more of PRIT's investment segments.

Investment Policy Statements III

In order to assure that all relevant parties — retiree members, investment service vendors, regulators, government bodies, and board members themselves— have a clear and accurate understanding of a retirement board's purpose and mission, it is important to develop, adopt, and periodically update a comprehensive investment policy statement.

In this report, a **legal and statutory framework** would address the board's legal creation and standing. It would state that the board serves the sole interest of its beneficiaries and does so by assuming and following standards of fiduciary duty and prudence.

Investment goals would identify the liabilities of the system and set general return goals aimed at offsetting the liabilities. Specific risk and return objectives would be addressed, along with risk tolerance. Asset allocation procedures and principles, including ranges of allocation and rules for rebalancing, would be discussed. (PERAC regulation 18.02 (4) states that the rate of return objective for the entire portfolio should not exceed the assumed rate of return used in the most recent actuarial evaluation by more than 1%.)

Investment structure would include a listing of all vendors of investment-related services, including managers, consultants, custodian banks, actuary, and attorney along with the fees of each. The standards for selection as well as procedure for selection of all vendors should be given, as well as policies and procedures for monitoring and reviewing all vendors.

For all asset classes and managers, a discussion of **asset class policies** would include the objectives, benchmarks, allowed investments, prohibited investments, investment styles, expected turnover rates, and policy on derivative use. For each asset class, the expected degrees of diversification and variation from the benchmark would be stated. In addition to the expected number of issues in a portfolio, rules would cover such factors as equity capitalization and style rules, industry and sector diversification, credit quality ratings, and maturity (duration) limits. There should also be clear rules on the use of cash and cash-related investments.

Other policies to be covered would include rules on required disclosures and other ethical considerations, proxy voting, policies on corporate governance, brokerage policies (including use of soft dollars), and securities lending.

In light of their importance and usefulness, PERAC urges all retirement boards to use Form 18:1 as the basis for developing and issuing regular comprehensive investment policy statements. Regulation 18.03 requires boards to notify PERAC of any changes in their investment objectives within ten days of their effective date, to review — and amend, if appropriate — their statement of objectives after each actuarial evaluation, and to inform PERAC by the end of each calendar year whether or not any changes were made in their statement of objectives during the year.

IV Asset Allocation

Over time, asset allocation generally accounts for a very high percentage (as much as 90%, by some estimates) of the investment return of a retirement system portfolio. Accordingly, retirement boards must exercise great discipline and care in developing, monitoring, and updating their asset allocation.

BASIC OBJECTIVE

The objective of asset allocation is to develop an investment program that will, at the minimum, meet or exceed the board's assumed actuarial rate on a consistent basis. It accomplishes this by seeking to achieve the highest possible rate of total return consistent with prudent levels of risk and liquidity. It is intended to assure the availability of sufficient assets to pay benefits while minimizing and stabilizing required contributions by the governmental unit and covered employees. Another goal is to achieve sufficient diversification that will deliver the expected return while preserving capital and avoiding large losses. In accomplishing these goals, the investment program will ensure that funds are managed with care, skill, prudence, and diligence.

PRIMARY COMPONENTS

In determining asset allocation, the primary components are 1) analysis of the current and expected financial condition of the system, including existing assets and future pension liabilities, and 2) expectations of long-term returns from the capital markets and the outlook for inflation, and 3) the system's risk tolerance.

Asset classes considered viable for inclusion in an asset allocation study can be any aggregation of financial or real assets that have risk, return, and correlation characteristics that are clearly different from those of other asset classes and where the inclusion or exclusion has a definable affect on the risk and return expectations of the portfolio's total return. All included asset classes should have some clear value to the portfolio such as diversification benefit, return enhancement, or liquidity that is sufficiently different from that of other asset classes. For all included asset classes, there should be a clear rationale for enhancing the system's chances of achieving its overall investment objectives.

Asset classes considered for inclusion must have sufficient data and history to allow for an objective assessment of the viability or potential benefit of the asset class to the system. There must be a sufficient basis for developing expected investment returns, risks, and correlations to other asset classes. Eligible asset classes must have sufficient size, liquidity, and cost efficiency to allow the system to invest amounts meaningful enough to have an impact on total return. The system must be confident of sufficient internal or external (i.e., investment consultant) expertise to ensure prudent implementation of an investment in this asset class. If an asset class is not currently being utilized by a significant number of other public pension funds, the system should have a clear and strong academic or other basis for its inclusion.

BASIC METHODOLOGY

An asset allocation plan is typically developed using a combination of quantitative and qualitative techniques. For each prospective asset class, the process requires a projected annualized return, an estimate of volatility (usually expressed as the standard deviation of expected returns), and an estimate of the asset class's correlation to the broad stock market. Using computerized simulation programs, several possible portfolios will be developed and considered, each having slightly different asset allocation distributions. Board members will consider the various alternative asset allocation plans, each of which will have its own projected return and projected volatility. Board members will consider all the alternatives and select the one that they are most comfortable with in the context of the likelihood of achieving a particular return with a level of risk that the board deems acceptable. Since purely quantitative simulation analysis will often produce asset allocation alternatives that may not appear practical or realistic, such as assigning unacceptably high allocations to certain nontraditional asset classes, the process is as much an art as it is science.

In addition to the quantitative inputs, there could also be qualitative inputs. For example, a system's potential allocation to certain nontraditional asset classes could be tempered by its organizational structure, i.e., whether or not it has the staffing and resources appropriate for managing certain types of investments. Certainly, a board should not proceed with any investment if it does not have a thorough understanding of — and comfort level with — the characteristics of that investment.

Asset allocation decisions are typically expressed in terms of a target percentage and, since actual percentages rise and fall as markets appreciate or decline, a range of allowed percentages. For example, a possible allocation to domestic equity might be 40% of the total portfolio, with a range of 35% to 45%.

An important consideration is that, while retirement boards should never make rushed investments or invest with managers with whom they are not totally comfortable, they should also realize that small commitments of 1% or even 2% to a particular asset class like alternative investments might be insufficient to have a meaningful impact on overall portfolio performance.

REBALANCING

Because actual asset allocation will constantly change as a result of relative market appreciation or decline among the various asset classes, it is essential that the board discuss and adopt a policy for rebalancing. That is, to decide in advance when to reduce investments in asset classes that have appreciated considerably and when to invest more in asset classes that have lost value. Since it is not psychologically easy to cut back on winners and invest in losers, it is important to have the discipline required by a rebalancing policy. Rebalancing rules are typically expressed as bands around the target level and need not necessarily be symmetrical. (For example, a typical policy might allow a 6% movement above the target percentage and 4% below it.) Bands should be sufficiently narrow to be consistent with the original asset allocation objectives but not so narrow that rebalancing is done too frequently, requiring excessive transaction costs. While decisions on rebalancing are generally made according to set rules and on set schedules, the board may also have procedures in place to effect changes in asset allocation when opportunities arise from sudden economic or market circumstances that make certain asset classes clearly overvalued or undervalued.

PERIODIC REVIEW

Asset allocation should be reviewed at least annually to ensure that the plan is on track to achieve the board's investment goals and that all the major assumptions used to establish the plan remain reasonable. A comprehensive review of asset allocation should be conducted every three years, or whenever a major structural change occurs in liabilities or investment assets. A significant change in funding status would clearly be a factor that would bring about a possible change in asset allocation.

An asset allocation plan may require reconsideration when it becomes apparent that the assets are not keeping pace with the liabilities of a plan. This may occur not only as a result of the assets not performing as expected but also because the liabilities may not be behaving as expected. A new asset allocation review may be necessary when various asset classes are either failing to achieve their expected long-term returns or exhibiting volatility or correlation characteristics much different than expected. Analysis of the liability side may lead to re-examination of benefit formulas and interest rate assumptions.

BASIC THEORY

The crux of the asset allocation process is that the asset classes that produce the strongest returns over time also carry the greatest expected volatility. For instance, projected returns on stocks (ranging between 8% and 10% annually) are typically well above those for investment grade bonds, but the expected volatility of equities is also considerably higher. (The incremental expected return of stocks over bonds is called the equity risk premium.) On a graph indicating the risk/return characteristics of various asset classes, cash and short maturity bonds would have the lowest expected return and risk while emerging market equity and private equity are on the opposite end of the spectrum, having expected returns somewhat higher than stocks but risk that is disproportionately much higher. This type of analysis typically extends from asset classes down to subclasses; for instance, among equities, small caps have higher expected return and risk than large caps and in fixed income, high yield bonds are further out on

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the risk/return curve than high grade bonds. Thus, a critical component in determining the success of an asset allocation process is the analysis of whether the system is achieving returns commensurate with the risk being assumed.

In developing their asset allocation, boards should follow PERAC investment regulation 18.02 (4), which states that the rate of return objective for the portfolio should not exceed the current assumed actuarial rate of return by more than 1.00%. While this regulation is intended to discourage systems from crafting overly aggressive portfolios, boards must also recognize the risk of having a portfolio that is overly conservative and risk-averse.

2007 INVESTMENT ASSET CLASS PROJECTIONS

As noted, asset allocation models utilize projections for the expected return, volatility (the standard deviation of returns around the expected return), and correlations (usually expressed relative to the US stock market). Not surprisingly, since consultants use proprietary models with differing methodologies and different inputs, their asset class projections will vary, sometimes by significant degrees.

Below are the 2007 capital market assumptions from Cliffwater LLC, general consultant to the PRIM Board and to several other large public pension funds in the US.

ASSET CLASS	EXPECTED RETURN	EXPECTED RISK	CORRELATION
US Stocks	8.00%	17.0%	1.0
EAFE Stocks	8.00%	18.0%	0.75
Emerging Market Stocks	8.00%	24.0%	0.70
Bonds (Lehman Aggregate)	5.15%	4.0%	0.35
High Yield Bonds	6.20%	10.0%	0.55
TIPS	4.80%	6.0%	0
Timber	7.25%	17.0%	0.10
Real Estate (NCREIF)	8.00%	10.0%	0.30
Real Estate (REITs)	6.45%	14.0%	0.65
Private Equity	11.00%	25.0%	0.75
Absolute Return	6.55%	5.70%	0.30

As an example of a contrasting view, below are the current capital market assumptions from an investment consultant that has several local public retirement system clients in Massachusetts.

Large Cap Equity	9.6%	16.0%	1.0
Small Cap Equity	11.6%	24.0%	0.88
International Equity	10.9%	20.6%	0.69
Domestic Fixed Income	5.5%	5.3%	0.21
International Fixed Income	6.5%	12.2%	-0.10
Real Estate	7.0%	8.1%	-0.03
Private Equity	13.6%	35.0%	0.63
Hedge Funds	7.5%	8.0%	0.16

V The Competitive Process

The main purpose of a competitive process is to assure that the retirement board has a sufficient number of highly qualified respondents from which to choose and that the ultimate selection is based on an informed and fair analysis of objective criteria. The board should design a process that maximizes its opportunity to achieve those goals.

There should be well-defined roles for all parties involved in the process. The retirement board has overall responsibility for the process and is the ultimate decision maker. The retirement board staff may have administrative functions to perform. The duties of the investment consultant (if employed) will include drafting the RFP, utilizing its investment manager database for screening purposes, initial screening of the respondents, scheduling manager interviews, and preparing relevant summaries for the board throughout the process. The board's attorney will be involved in drafting a contract with the winning vendor.

It is important to note that while there are no PERAC regulations that govern the specific details of how a competitive process should be conducted, there are a number of basic principles that should be followed.

First of all, the process should be **open**: Public notice of the RFP should be posted or published in media that are likely to be seen by qualified respondents. Possible choices are the PERAC web site, the Massachusetts Public Pension Forum web site (www.mppf.org), the investment consultant's web site, "Pensions & Investments" or similar national publications, the Massachusetts Secretary of State's "Goods and Services" publication, or other appropriate media. While it is possible that an RFP notice might attract so many responses as to make the job of the board and its consultant extremely time consuming and difficult, the greater risk is advertising in an outlet that attracts too few qualified responses.

It is important to note that a board is not constrained to consider responses only from firms that respond to the RFP. It is perfectly permissible for the board's consultant to identify qualified potential managers for particular mandates and to send RFPs to and solicit responses from such firms. Indeed, such outreach should be encouraged by boards. This type of solicitation may be most helpful in searches for alternative investments managers.

The process should be **fair**: The RFP should include basic information on the retirement board and its investment program. It should give a detailed schedule of expected events in the process, such as when the responses are due, when finalists will be selected, when interviews will be conducted, and when final selection is expected to occur. The expected scope of service in the proposed mandate should be discussed in detail, as well as minimum requirements expected of managers and what the board's evaluation criteria will be. It is important that all respondents be treated with equal consideration and that there are no inappropriate influences in the decision process.

The process should be **objective**: There should be clear pre-established criteria of minimum standards. For investment managers, such standards might include assets under management (firm-wide and in the specific asset class mandate) and length of track record. The RFP should state whether it has any preferences or requirements relative to style (i.e., concentrated or diversified, aggressive or risk-constrained) or type of account (separate, commingled). These criteria will be a factor in determining whether the board receives too many or too few responses.

The board must make clear its intent and follow through on its commitment to conduct its search by utilizing specific objective and relevant criteria that are the basis of inquiry in the RFP. As described more fully in the accompanying report on "Selecting an Investment Manager", there are many possible criteria that should enter into the consideration of an investment manager's investment capability (personnel, philosophy, process, performance, et al.) and its organizational strength. Expectations for client service are another very relevant area of inquiry. Boards must fairly determine whether respondents satisfy the minimum criteria and then evaluate qualifying respondents only on the basis of these objective criteria.

Proposed investment management fees will also be a factor in the selection process. Although there are no regulatory requirements or fiduciary principles that require boards to choose investment managers solely on the basis of low fees, boards should be comfortable that the fees of prospective managers are consistent with industry standards for the asset class in question. Once a manager is selected after consideration of its overall investment capabilities and organizational strength, fees are often the subject of negotiation between the prospective manager and the client.

For those boards that do not employ an investment consultant, PERAC is pleased to offer technical assistance in the writing of RFPs. Boards may also obtain useful advice in this area from the Government Finance Officers Association (GFOA) or from PRIM.

There should be a clear discipline in the **processing** of responses. All responses should be date stamped, no responses should be allowed after the submission deadline, no alterations or corrections should be allowed after submission, all responses should be opened in a group setting, and there should be a clear program for communicating with all the respondents.

The board should maintain a **procurement file** that contains records and minutes pertaining to all aspects of the search process. As time goes by, the board should use its best judgment in discarding all but the most relevant documents pertaining to the search. It is generally permissible to discard most documents within six years.

The competitive process involves a number of specific, fundamental **steps**. These include elimination of unqualified respondents, analysis and comparison of the relevant characteristics of the remaining respondents, preparation of a list of firms for final consideration, performing additional due diligence (background checks, reference checks, etc.) on these firms, selection of firms for finalist interviews, preparation for and conducting the final interviews, discussion and deliberation by the board, and voting on final selection.

After manager selection, the board's attorney will draft and execute a **contract** with the manager. This contract will specify the investment objectives and benchmark, investment guidelines, performance expectations, brokerage practices, fees, rules for termination, reporting requirements, etc. It will also make official the requirement to comply with all PERAC regulations and all relevant statutes of Chapter 32 of the Commonwealth of Massachusetts' general laws.

Before commencing the funding of the new manager, the board will submit the required regulatory documents (competitive process notification, disclosure statement, vendor certification, and, if necessary, exemption application) to PERAC and await formal acknowledgement from PERAC that the documents have been received.

While it may be in the best interests of the board to conduct a competitive process whenever a new investment is anticipated, there are special situations when a process is not required. Investment Guideline 99-2 allows modest modifications to existing mandates. Investment Guideline 99-3 allows follow-up investment in alternative investment partnerships under certain circumstances. If circumstances clearly indicate that the investment is essentially a continuation of a recently made one and that a search process would not likely be beneficial to the board, PERAC will also consider appropriately justified requests for investment in follow-up real estate partnerships. Also, in light of the limited number of vendors and the relative similarity in strategies, PERAC acknowledges that search processes for index funds might be less involved than those for actively managed strategies.

VI Selecting an Investment Manager

After asset allocation, the most important decision facing a plan sponsor is the selection of money managers. This process is generally as much an art as a science and it typically takes several years to reliably determine whether the effort has been successful.

An investment management firm should be selected not because of its relationship with a particular consultant or with any other party, not because it made the glitziest presentation, and not necessarily just because it had superior performance in the recent past. While investment management fees should be a valid consideration, they should not necessarily be a decisive factor. A search for an investment manager should incorporate an examination of ownership and organizational factors pertaining to the firm, an understanding of its investment philosophy as well as the process by which it implements that philosophy, as well as a thorough assessment of past performance and how relevant it might be for anticipating future returns. Also, besides knowing exactly who will be managing the fund's money, it is very important to know about the frequency and quality of client service.

Basically, a search for an investment manager begins with a decision as to how the mandate would fit in with overall asset allocation. The process should end with the selection of a manager in whom the board has confidence not only for its capability to fulfill its investment mandate but also for the likelihood of being treated as an important client and receiving excellent client service.

Since investment styles go in and out of favor, since very few managers outperform their benchmarks year-in and year-out, and since all firms are subject to organizational and personnel change, there are no "sure things" in investment manager selection. However, it is fair to say that the keys to a successful relationship between a sponsor and a manager involve not just a determination of investment expertise but also the establishment of a sense of overall comfort and mutual respect.

The following is an outline of a number of the factors that should enter into a manager selection process. The factors discussed here are particularly relevant to traditional equity and fixed income managers. For managers in nontraditional asset classes like real estate, alternative investments (venture capital, buyouts, etc.), and hedge funds, many of the criteria listed below may not be relevant while several additional factors will require analysis. Manager selection is vitally important in all asset classes, but perhaps no more so than in hedge funds, where returns are predominantly dependent on manager skill rather than on trends in financial markets.

PEOPLE

- What is the organizational structure of the firm?

- What are the staffing levels of the firm, by department or function?

- What are the biographical highlights of key personnel?

- What is the structure of the relevant investment group for this mandate?

- Who will be the primary manager assigned to this account?
    - Get to know him or her!
    - How many accounts does he/she manage?
    - Who will be his/her backup?

- Do the staff in this investment group work as a team?

- Discuss recent staff gains and losses, firm-wide and in the relevant product.

- How are key staff compensated?

PHILOSOPHY

- What is firm's basic overall investment philosophy?
    - Fundamental (top-down, bottom-up), quantitative, or technical

- What is role of research?
    - In-house staff, or street research?
    - What factors are emphasized?
    - Extent and methods of communication with company managements

- For in-house research, how are analysts organized?

• How is investment policy determined? Is there an investment committee?

• What is the current investment strategy in major markets?

• Has there been consistency in investment philosophy and strategy, or have they evolved with changing conditions over time?

PROCESS

• What are the basic characteristics of the investment process?

• Has this process changed in recent years?

• Are portfolios managed by teams or by individual managers?

• Do individual managers have discretion relative to firm's investment strategy?
  ◦ If so, how much discretion do managers have?

• What is the review and control system relative to managers' performance?

• How do analysts communicate with investment managers?

• What is the methodology of portfolio construction?

• How are security selection and trading done?

• What is the universe of securities for the particular mandate?

• What methodology for security evaluation is used?

• How are trades allocated among accounts?

• What are the buy/sell disciplines?

• Do portfolios typically have high or low turnover rates?

• Are portfolios typically highly concentrated or highly diversified?

• To what extent are derivatives used?

• Is there a system of risk management and control?

• How are broker/dealers for trade execution selected?

• Does the firm have an automated trading system that seeks to limit trading costs?

• What are the firm's policies and procedures on "soft dollars"?

• How close are current assets in this product to the firm's perceived capacity level for the product?

• Describe the firm's back-office capability and what personnel or system enhancements might be contemplated.

• Describe the firm's compliance process and procedures.

PERFORMANCE

• How often are returns calculated and made available?

• How has performance been relative to benchmark for this product?
  ◦ Give performance relative to benchmark for past five years.
  ◦ Give annualized returns for 3 and 5-year periods relative to benchmark.
  ◦ Include all past and present discretionary accounts of similar styles.

• To what extent is the current portfolio management team responsible for reported performance?

• Is the benchmark appropriate?

• Is performance presented objectively and fairly?

• Has performance been consistent over time?

• What is the portfolio's expected tracking error?

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- How volatile have returns been?
    - Give standard deviation of returns for three and five year periods.

- Is there a system for detailed performance attribution?
    - Give attribution analysis for recent performance.

- Is performance repeatable or has it been due to special, one-time factors?

- Is performance consistent or widely dispersed among accounts?

- Under what economic or market conditions would this product be expected to perform particularly well or poorly?

THE FIRM

- Give a brief history.

- Is the firm a registered investment advisor?

- Is the firm independent?

- If not, what is nature of its relationship with the parent company?

- Are there any significant company affiliations or joint ventures?

- Do employees have a stake in ownership? If so, what %?

- What is the compensation and incentive program for investment staff?

- What is the code of ethics for investment staff?

- What is the corporate culture?

- What are the overall business objectives?

- What are current assets under management, categorized by product line?

- What are recent growth trends?

- What firm products are "hot"?

- Is there any limit on asset growth or new clients?

- What new products or other changes are contemplated?

- Is the client base diversified?

- Is the client base stable? How many accounts have been gained or lost recently?

- Is product offered in commingled funds, separate accounts, or both?

- How is client service structured? Who will be the primary contact and what is the frequency and form of contact?

- Provide sample market letters and portfolio reviews.

- Are portfolio managers accessible and responsive?

- Does the firm have existing public pension clients? How many?

- Is there any ongoing litigation, government regulatory action or investigations involving the firm or its principals?

- Is the firm strong financially?

- Are there any potential conflicts of interest?

- Who is the product's custodian bank?

- What sources are used for security evaluation?
    - How are exception securities priced?
    - How does the firm ensure against stale pricing?
    - Is there a procedure to over-ride vendor pricing?

- Who are firm's auditor and outside legal counsel?

- How is proxy voting handled?

- Recent material developments

Investment Manager Guidelines VII

Rules must be laid out proscribing exactly what universe of securities the manager may work with and what types of strategies may or may not be employed.

Typical factors to be addressed would be:

DOMESTIC EQUITY

- Concentration/diversification
  - Maximum percentage (i.e., 5%) that a single stock may represent of the total portfolio
  - Required minimum number of security holdings
  - Rules on industry/sector concentration
  - Allowed deviation relative to benchmark

- Maximum percentage holding of total outstanding shares of a particular stock

- Are convertible bonds, warrants, and/or preferred stock allowed?

- Are Real Estate Investment Trusts allowed?

- Are ADR's allowed?

- Rules relative to minimum number of years in operation or of profitability for portfolio stocks

- Rules on capitalization sizes (large, mid, small)

- If applicable, rules on style (growth/value) neutrality or bets

- Rules relative to exchange listing of stocks, use of OTC stocks, and private placements

INTERNATIONAL EQUITY

- Policy on currency hedging
  - Pro: Currency shifts can be a significant performance factor.
    - If executed properly, hedging can add value.
  - Con: Currency effects are muted over time.
    - Currency is another source of diversification.
  - If allowed, is hedging done by manager or outside specialist?
  - If allowed, need strict controls to prevent speculation and unforeseen risk.

- Rules relative to country diversification relative to benchmark

- Rules relative to currency diversification

- Rules on industry diversification relative to benchmark

- Policy on emerging market investments

FIXED INCOME

- Allowed investment universe: US Treasuries, agencies, corporates, asset-backed, Yankee bonds, mortgage-backed

- Rules on concentration and diversification
  - No bond should represent more than x% (typically 5%) of portfolio, except for US-government backed securities
  - Relative to number of security holdings
  - For mortgage-backed securities, geographical diversification
  - Allowed deviation relative to benchmark industry/sector characteristics

- Rules on private placements

- Rules relative to allowed credit ratings
  - Permitted ratings
  - Rules pertaining to credit rating downgrades

- Rules on allowed duration deviation relative to benchmark (i.e., 75-125%)

REAL ESTATE

- Diversification by security type (REITS, private holdings, etc.,)

- Diversification by property type (residential, retail, office, hotel, industrial, etc.)

- Diversification by geographical region

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ALTERNATIVE INVESTMENTS

- Venture capital
  - Diversify by early, mid, or late stage
  - Diversify by industry
  - Diversify over time (vintage years)

- Private equity
  - Buyouts, Mezzanine funds, special situations
  - Industry diversification

HEDGE FUNDS

  - Rules for strategic emphasis
  - Rules for diversification among managers and strategies
  - Restrictions on leverage
  - Transparency requirements
  - Rules for minimum track records and size

FOR ALL ASSET CLASSES

- Benchmark selection
  - Benchmarks can be established for overall policy as well as for asset classes and individual managers
  - Make sure benchmark is appropriate for purpose
  - Benchmark can be either broad (DJ Wilshire 5000, Lehman Aggregate) or specific (i.e., Russell 2000 Growth)
  - There are often competing benchmarks to choose from (i.e., S&P 500 and Russell 1000 for large cap equity) and their performance can vary substantially, particularly over the short-term
  - No benchmark is perfect; each has unintended exposures
  - Synthetic benchmarks, expressed as a weighted average of a number of benchmarks, may be constructed and used to monitor either the entire portfolio or specific asset classes

- Valuation
  - Publicly traded securities
    - Custodian's independent pricing service
    - Procedures for evaluation of difficult-to-value securities
  - Alternative asset classes
    - Real estate:
      - REITs (market-priced on stock exchange)
      - Private investment (periodic market valuation)
      - Timber (periodic market valuation)
    - Venture capital, private equity
      - Valuations may be subjective prior to liquidation of underlying investments
    - Hedge fund of funds
      - Understand procedures for valuing illiquid securities and instruments

- Limits on portfolio turnover
  - Avoid churning

- Policy on derivative use
  - Allowed for specific purposes (liquidity, hedging, etc.)
  - What instruments allowed
    - Options, futures, forwards
    - Exchange-traded
    - OTC
    - Rules on counterparties
  - Rules on purchasing or selling (writing)

- Limits on leverage
  - Typically not allowed in traditional asset classes
  - Allowable in alternative asset classes and hedge funds
    - Proscribe limits for leverage

- Policy on brokerage practices
  - Best execution is primary goal
    - Is commission recapture a worthwhile exception?
  - Require reports on soft dollars
  - Prohibition on directed brokerage
  - Periodically review transaction costs

- Policy on securities lending
  - Credit rating of counterparties
  - Collateral requirements

- Policy on cash holdings
  - Maximum/minimum % holdings
  - Required credit rating for cash instruments

Selecting a Benchmark

In evaluating how either the overall pension fund or individual managers are performing, it is not sufficient simply to check absolute returns. It is relative performance — comparing returns to how the broad market or particular asset classes have done — that is most appropriate. A manager who achieves 20% when the market returned 35% should be questioned for his underperformance while a manager who has a flat (i.e., zero) return when the market went down 20% is deserving of praise.

As discussed elsewhere, it is recommended that retirement boards adopt benchmarks to use for tracking the performance of individual managers, asset classes, as well as the entire portfolio. For instance, a board may use the S&P 500 to monitor large caps, the Russell 2000 to monitor small caps, and the Dow Jones Wilshire 5000 or the Russell 3000 to monitor their overall domestic equity portfolio. For overall portfolio monitoring, synthetic benchmarks are usually constructed using a weighted average of the benchmarks for the individual asset classes within the portfolio.

A good benchmark will not only provide a valuable gauge as to how a market or market segment has performed but will also be an appropriate tool to objectively evaluate the performance of asset managers. The benchmark will also serve to define the allowable universe for security selection for each manager. Analyzing a portfolio by comparing its basic characteristics (sector and industry diversification, duration, etc.) to that of the benchmark can help to gauge the risk the manager is taking. By being investable, a good benchmark also offers an alternative to active money management. Conversely, adoption of an inappropriate benchmark can help an underperforming manager present an artificially positive spin on his/her performance.

A good index should be objective, transparent, and rules-based. It should reflect the asset class it is intended to represent by being comprehensive, tracking either the entire set of securities within the class or a reasonable representation of the class. It should be regularly updated to reflect changes in the market. For example, the 30-stock Dow Jones Industrial Average, because of its very limited scope, is not used as a reliable benchmark for portfolio managers despite its long history and popularity in the media.

Weighting is an increasingly controversial issue in equity market benchmarking. Most widely-used equity indices (included S&P and Russell) are capitalization weighted, typically reflecting the investable portion of companies' outstanding shares. Others (like the Dow Jones) are simply price-weighted. Research Affiliates has developed a new brand of index that is fundamental in nature, weighting stocks by financial parameters of size such as sales, gross dividends, cash flow, and book equity value.

Competition among the various index providers is very brisk and aggressive. In equities, Standard & Poors, Russell, and Dow Jones Wilshire can all make a case why their indices should be used. Critics of the S&P 500 fault it for not being rules-based (its components are selected by committee), for not being the largest 500 stocks in the market, and for allowing a small number of large stocks to dominate the index's performance. Some competitors fault the Russell indices for using limited analytics in their separation of growth from value stocks. In cases such as these, there is no one obvious choice as each organization has credibility and strong selling points. For some asset classes there is no clear choice of benchmark. For instance, in the asset class of high yield bonds, various systems in Massachusetts use Merrill Lynch, Credit Suisse First Boston, or Lehman Brothers as their benchmark.

Since each benchmark has unique characteristics, performance can often vary substantially. For instance, the S&P MidCap 400 Index returned 10.32% in 2006 while the Russell MidCap Index returned 15.26%.

For hedge funds and absolute return portfolios that are intended to seek performance that is uncorrelated to any specific financial market, pension funds typically create a benchmark that is market independent. For example, the PRIM Board uses "T-bills plus 4%" for tracking its absolute return portfolios.

Choice of benchmark clearly plays a prominent role in the monitoring of managers. For instance, boards should be wary of managers with growth mandates straying into value stocks to enhance performance during periods when growth is out of favor, or of fixed income managers with US Treasury note benchmarks who use significant

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amounts of non-governmental securities (corporate bonds or mortgage-backed securities) when yield spreads are attractive.

In light of the many reasons why benchmarks are such an important component in the investment process, it is vital that boards become familiar with the characteristics of the major indices and make informed decisions as to which ones are most appropriate for their use.

As noted previously, however, there are times when market conditions and characteristics might sometimes diminish the usefulness of certain benchmarks for manager evaluation. Therefore it is also important to also consider performance relative to an appropriate peer group of managers.

Regulation 16:07 of 840 CMR states that,

1) Every retirement board shall at least quarterly review the performance of the overall portfolio and selected components against the retirement system's investment goals and policies.

2) Every retirement board which has received an exemption pursuant to 840 CMR 19:00 shall meet with its qualified investment manager or managers at least annually and shall, at a minimum:

> a) require its qualified investment manager or managers to provide a comprehensive written quarterly report which includes a review of investment performance including a review of the investment manager's relative performance, a review of the system's investments, and a report on the investment manager's current investment outlook or forecast as well as a strategy for the future;
>
> b) review each such report in depth with its qualified investment manager or managers; and
>
> c) require its qualified investment manager or managers to send one such report to the Commission each year.

3) Every retirement board which has retained a qualified investment manager shall at least annually make a determination as to whether the manager continues to operate in the manner represented when retained and outlined in the agreement between the board and the qualified investment manager.

4) Every retirement board which has retained a qualified investment manager shall require said manager to report key personnel staffing changes to the retirement board and the Commission on or before the effective date of such changes.

While the actual frequency and the nature of reviews will vary according to asset class, the liquidity of markets, and perhaps logistics, the regulations above should be seen as the minimum standards for effective monitoring of managers. Particularly for equity and fixed income managers, many public pension funds will have formal strategy and performance reviews with their managers on a quarterly or semi-annual basis. When it is deemed practical and appropriate for logistic reasons, telephone conference calls might be a viable substitute for actual meetings from time to time. It is also recommended that board members periodically visit and conduct reviews at the investment manager's office to assure that the infrastructure is still in place to support the investment process.

A comprehensive performance review should go well beyond simply reviewing the manager's **performance** relative to the benchmark. It should encompass: ensuring **compliance with the investment guidelines**, ensuring compliance with **reporting requirements**, ensuring **continuity** of the investment process and philosophy, and ensuring **consistency of strategy** (no "style drift"). In short, the review is intended to assure that the reasons for originally selecting the manager are still intact.

A manager's presentation should begin with an **organizational overview**, including discussion of the firm's mission, history, ownership, assets, clients, etc. Any pertinent organizational or staff changes (resignations, hires, etc.) should be highlighted, and biographies of key personnel should always be included. Any pending legal or regulatory issues should be disclosed.

A thorough review should re-state the **portfolio objectives and account guidelines**. The investment universe should be reviewed, highlighting allowed or prohibited types of securities and what, if any, derivative use is allowed. Perhaps most importantly, board members should inquire about and be comfortable with the manager's **risk management** procedures.

The manager should offer a **market overview**, reviewing and analyzing trends and conditions in the relevant market. He should compare the **portfolio structure** to the benchmark, highlighting significant over-weightings or under-weightings in sectors. Similar comparisons should be shown for major **portfolio characteristics** (for stocks, cap size, P/E valuation, etc.; for bonds, maturity, coupon, etc.). Major holdings should be listed; if possible, all holdings should be listed.

Analysis of performance should begin with confirma-

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tion that the manager is using the benchmark(s) agreed to in the account guidelines. Appropriate time periods for performance appraisal should be both short-term (quarter, year-to-date, past 12 months) and long-term (i.e., three years, five years, since inception). Performance should ideally be presented in both gross and net terms, but it should at least be clear which returns are being presented.

Just as important as the appropriate presentation of relevant performance figures is the discussion of **performance attribution**. The manager should explicitly present the factors (sectors, securities, duration, etc.) that enhanced performance and which had a negative impact. The extent to which performance was due to one time non-repeatable factors such as refinancings in the bond market or buyouts in the stock market should be presented

As part of the presentation, the manager should present his firm's and/or his department's **outlook** for the economy, the market, and the portfolio.

For managers of nontraditional asset classes like real estate and alternative investments, the monitoring process will be different, tempered by such facts as the absence of public markets for the underlying investments, the lack of obvious benchmarks, and the much longer investment time horizons.

As noted above, a fundamental part of the monitoring process is the boards' annual determination that a manager is satisfactorily fulfilling his mandate. For managers where there is some question about their fulfillment of the mandate, boards should have pre-set rules for placing managers on a "watch list", how long a "probation" period might reasonably be, and some general understanding of how managers might be removed from that list in the future, either through reinstatement or termination. Possible reasons for placing a manager on a watch list are 1) organizational issues such as a change in firm ownership or control, significant change in team composition or responsibilities, or departure of key personnel, 2) below average performance over both short and longer-term periods or performance inconsistent with the manager's style and mandate, or 3) other factors such as material undisclosed guideline violation, uncorrected contract violation, unsatisfactory client service, or major regulatory or other proceedings affecting the firm.

Terminating an Investment Manager X

As in the selection of managers, the decision to terminate is also an art rather than a science. There have been many instances of established managers who were hired based on strong recent performance records and who maintained their basic investment process but who proceeded to substantially under-perform. There have been many instances of managers terminated for legitimate reasons who proceeded to perform very well for their remaining clients.

Reasons to consider the termination of a manager may be either 1) qualitative, such as **major personnel changes** or other **organizational issues,** or 2) quantitative, involving measurable **underperformance over a full market cycle** or clear evidence of **deviation from the manager's mandate.** They may involve policy issues, such as **violation of investment policies** or **change in basic investment strategy**, or even **communication issues,** such as failure to adhere to reporting requirements.

There are no hard and fast rules within the industry as to what constitutes sufficient and decisive justification to terminate a manager. In the end, it is simply a matter of a board no longer being **comfortable** with and no longer having **confidence** in a manager.

In short, termination can come about by a change in any of the factors that led to the manager's hiring. This could include the retirement board simply making an adjustment to its **asset allocation** that lowers or eliminates exposure to a particular asset class or subclass; in such circumstances, a manager would be terminated despite having satisfactorily fulfilled its mandate in every way.

The volatile nature of the financial markets, where asset classes, subclasses, and styles go in and out of favor in unpredictable cycles, makes the decision to terminate a manager very difficult. It may not always be clear whether a manager has been making bad investment decisions and security selections or whether, as underperforming managers are wont to assert, their styles are temporarily out of favor and better performance is just around the corner. With proper analytics for performance attribution and careful consideration of available data, the case for retention or termination should come into clearer focus.

The turn-of-the-century technology stock "bubble" provided a vivid example of the challenges inherent in manager termination decisions. During those years when the stocks of overly hyped companies with little or no profit performed much better than those of well-established companies, a number of well-regarded investment management firms performed poorly because they refused to deviate from their policy of not investing in companies that did not have a minimum number of years of actual profitability. Such managers lost many accounts during this period, but after the bubble burst and fundamental rationality returned to the market, their loyal clients were rewarded with several years of above average performance.

Similarly, it is very reasonable that retirement boards will choose to terminate their relationships with investment management firms if the relevant portfolio management team or other key personnel suddenly depart. Yet, it is very possible that the firm will hire or re-assign new personnel who will do as well as or even better than the departed ones.

When managers consistently under-perform their benchmarks for more than a single market cycle, the decision to terminate can become relatively straightforward. Bad interest rate bets, persistent mistakes in credit analysis, untimely sector bets, and consistently poor stock selection cannot be overlooked. More often than not, however, the decision on how patient to be with an underperforming manager is more subjective and difficult. In either case, the board needs to do substantial due diligence in order to accurately understand the extent of and reasons for lagging performance.

One of the more serious mistakes a board can make is to suddenly terminate a manager before a replacement is in place. In most cases, it is best to conduct a search for a possible replacement manager but hold off on terminating the incumbent until the board has selected a new manager with whom it is clearly more comfortable. However, there are cases where a board will choose to suddenly terminate its relationship with an investment manager as a result of unexpected but very serious circumstances, such as mass departure of investment professionals, major organizational issues (such as regulatory finding of inappropriate practices or criminal indictments), or other circumstances that may cause rapid outflows from a specific investment product or firm. In such cases, PERAC will usually authorize boards to utilize index funds as temporary replacements. Of course, boards that have found it difficult to identify active managers that consistently beat their benchmarks should not lose sight of the fact that low-cost index funds are a very viable, efficient, and widely used alternative for *permanent* management mandates.

XI Elements of Risk and Risk Management

In its most general context, investment risk is portrayed simply as the standard deviation of returns around the expected return. In reality, the volatility of returns is a valid but very limited measure of risk. In investing in general, risk is the chance of not meeting one's investment objectives. For pension fund investing, risk is more specifically the chance that assets will not support the liabilities of the system, and this can arise because liabilities do not behave as expected, assets do not behave as expected, or a combination of both factors.

Assets may fail to behave as expected because of **market** risk, when some or several aspects of a system's asset allocation model fail to achieve their expected results, either in terms of returns or in their volatility or correlation with other asset classes. While it is expected that all asset groups will perform significantly differently than expectations over particular short-term periods, there is the risk that the long-term behavior of one or more asset types turns out significantly different as a result of unforeseen market, economic or political events.

There could be **legislative** or regulatory risks if governing bodies limit the allowable investments by pension systems or unrealistically adjust the actuarial interest rate assumption, a step which could lead the system to take unwarranted investment risk.

Finally, every security or holding carries several dimensions of **inherent** investment risk. Among these are:

1) Capital risk — the risk of losing the original investment

2) Credit risk — the risk that a bond issuer will not make scheduled debt service payments

3) Inflation risk — the risk that returns will fail to match or exceed the inflation rate

4) Interest rate risk — the risk that market value will be affected by changing interest rates

5) Liquidity risk — the risk that an investment cannot be readily converted to cash at prevailing or assumed prices

6) Market risk — the risk that adverse market shifts will cause losses

The above elements can be termed **external risks** since they are largely beyond a plan's ability to control. Boards should not seek to avoid such fundamental investment risks since expected returns are usually positively related to assumed risk. One cannot achieve high returns without taking risk. Conversely, for a board that has a targeted return, adopting an overly conservative portfolio increases the risk of not meeting the return objective. Thus, external investment risks are not to be avoided or minimized; they should be prudently managed.

On the other hand, there are several dimensions of **internal risks**, and these are risks that boards can and should attempt to minimize. Under what may be termed **strategic risks**, there are the risks that the plan has not chosen wisely between active managers and passive alternatives (index funds), that it has made unwise bets on style (i.e., growth and value), that it has made unwise bets on capitalization options (e.g., large cap vs small cap), that it has made unwise bets on sector allocations (technology, financials, etc.), or that it has made other deviations from policy benchmarks, such as duration (weighted-average maturity) of fixed income accounts being longer or shorter than the benchmark. Disappointments in performance can also arise from choosing an inappropriate benchmark or from under-appreciated flaws in the benchmarks themselves.

Another element of internal risk is **poor governance**, which refers to the risk that the board, its staff, or its vendors will either intentionally or unintentionally cause the system's assets to under-perform. Vendors may include money managers, consultants, auditors, actuaries, or legal counsel. Characteristics of poor governance would include not only pure incompetence but also improperly defined roles, poor communications, failure to meet fiduciary responsibilities, lack of ethical standards, and inconsistency.

Implementation risk is another category of internal risk. First, there is the **tactical risk** that the actual asset allocation differs from the intended asset allocation or that the investments under-perform their policy benchmarks. The former reflects portfolios that have become out of balance because of uneven performance among the various asset classes while the latter reflects individual managers who have underperformed as a result of their style being out of favor, drift from their expected strategy, or simply bad investment management.

Operational risk is also a factor, referring to the risk of an operational breakdown on the part of external managers, custodial banks, or internal staff. For managers, the risks involve inappropriately purchasing or selling securities or not accomplishing the intended purchase or sale of securities. For custodial banks, the risk is that they don't provide the plan with accurate data on holdings, pricing, and transactions on a timely basis. Internal problems could involve cash management or failures in operating systems or communications links.

OVERVIEW

Since risk for public pension systems is a multi-dimensional concept, effective risk management accordingly involves many different aspects. Investors cannot control what happens in the financial markets relative to the several dimensions of investment risk but they can manage many other factors that represent internal risks. Thus, proper risk management involves:

- Having periodic actuarial reviews
- Conducting periodic asset allocation studies using the best possible models of the expected return, volatility, and correlation for asset classes
- Having periodic asset/liability studies to identify changes in the relationship between assets and liabilities
- Avoiding unnecessary intrusion by political bodies by having a well-organized and well-documented investment policy statement, educating and effectively communicating with governing bodies as well as with constituents, and having effective legislative liaison
- Having an asset allocation that is well diversified by asset class, sectors, and styles
- Having an asset allocation that is neither overly aggressive nor too conservative
- Being aware of all "bets" by managers that could cause deviation from benchmark returns
- Being aware of overall biases (i.e., growth, small cap, short maturity) or deviations from policy benchmarks in the overall portfolio
- When having multiple managers in a particular asset class, being aware of how styles or exposures may be complementary or redundant; monitoring common holdings
- Striking a good balance between having too few managers, which raises concentration and organizational risk, and having too many managers, which could cause higher overall fees, too much diversification (leading to index-like returns), and increased complexity in monitoring
- Having a disciplined policy for and periodically performing necessary rebalancing
- Having clearly defined and appropriate benchmarks, for the system as a whole, for major asset classes, and for specific managers
- Demonstrating strong due diligence in manager selection
- Conducting ongoing due diligence of all managers through face to face meetings and other means
- Monitoring managers' compliance with mandates by means of thorough exception reports
- Being aware of and monitoring managers' use of derivatives and similar instruments
- Effectively monitoring performance, recognizing that short-term performance can be volatile and long-term performance is most relevant
- Analyzing universe comparisons for performance of the total fund, each asset class, and each manager over both short and long-term periods

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- When managers are terminated, ensuring that transitions to new managers are as seamless and as efficient as possible

- Reconciling monthly portfolio reports from managers and custodian

- Understanding fiduciary responsibility and establishing internal code of ethics

- Assuring board competence through effective hiring and training

- Having written documentation of all policies, procedures, and current practices

- Clearly specifying the expected responsibilities of the investment consultant, if any

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