Improving the Investment Performance of Massachusetts Pension Funds

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Executive Summary

Pension fund management can benefit from three broad sets of reforms:

1. Adopting and continuously updating a system of clear benchmarks consistent with actuarial and target returns as well as with the dual mandate of capital preservation and reliable returns.
2. Moving away from more volatile and illiquid asset classes such as commodities and private equity towards assets that generate free cash flows and would improve fundamental diversification such as blue-chip convertibles/revertibles and REITs, while maintaining a suitable cushion of liquidity in cash equivalents to prevent fire sales of securities due to market fluctuations.
3. Boosting the transparency of decision-making and adopting the best practices of continuous review and improvement.

The adoption of these reforms can significantly improve the performance of retirement systems statewide and reduce the costs of funding public pension benefits. Investment and payment planning will be facilitated by more predictable cash flows from investing activities, helping avert potential liquidity crises. Taxpayers and employees will have better access to information about the cost and security of retirement benefits, which would add to the accountability of retirement boards. The improved governance structures and investment procedures will help trustees manage their funds more astutely and cost-effectively – in closer alignment with the interests of their constituents.

Introduction

Massachusetts public-employee pensions have been chronically underfunded for years and will thus present a growing burden on the state's budget. Minimizing that burden in both the short and the long run would be facilitated by an improvement in the investment returns of the commonwealth's 105 retirement boards. The main policy documents guiding the investment process in the pension system are the Public Employee Retirement Administration Commission's (PERAC) *Investment Best Practices Manual* (IBPM) and *Regulations* (840 CRM). Because the Pension Reserves Investment Management Board (PRIM) has most other funds in Massachusetts, its *PRIT*[1] *Fund Investment Policy Statement* (FIPS) can also be taken as a useful resource by local boards designing their own strategy.

These three documents *de facto* constitute the investment policy statement (IPS) for PRIM and the other Massachusetts pension funds. An IPS provides critical guidelines as to how investment managers should allocate the funds on account with them, while also helping each retirement board to establish consistent decision-making procedures and maintain the continuity and consistency of its strategy. The current Massachusetts policies do afford a solid foundation for the state's public-employee pension system, but they can be improved further and brought up to date with the current investment environment and the state of the pension system.

Individual retirement boards have diverse stakeholders and proper care should be taken not to limit their ability to manage their assets accordingly. In light of this, PERAC has been suitably cautious in imposing restrictions on boards' asset management strategies.

However, a lot more can be done to provide more detailed guidance and a priori advice regarding those strategic decisions, as is the nature of most of the policy recommendations below. In most cases, these items might escape the attention of a board manager either because of the intricacy of the subject matter or because they are based on recent developments in finance and investment management that have not yet gained mainstream recognition.

Devising a comprehensive and yet flexible investment strategy is a never-ending process. Pension-fund investment is a field where the devil is in the details, as retirement funds exist at the intersection of finance, government, society and, unfortunately, politics. An essential function of any retirement board is that it periodically provides a critical evaluation of its investment policy in view of the needs of the retirement system it services. An integral part of such a critical review is the reexamination of its own best practices and the continuous improvement of the investment-policy-generating process itself. The purpose of this paper is to help achieve those goals by putting forward a number of improvements and augmentations to the existing set of governance documents.

Although it is based on a comprehensive analysis of the aforementioned documents, this work is not intended to be a summary of existing policies or a complete IPS in itself. Rather, it provides a set of necessary changes to the established framework, aimed at removing inconsistencies and setting even clearer guidelines for pension managers. Short of more radical pension reform initiated on Beacon Hill, most of these recommendations can be implemented directly by PERAC and generally do not require legislative action.

In light of these considerations, this account seeks to strike a reasonable balance between following the structure and terminology used in the existing policy documents on one hand and logical and thematic coherence on the other. As they do in the current body of guidelines, many subjects inevitably reappear throughout the paper, which serves to highlight the complexity of the task at hand.

Investment Planning and Actuarial Analysis

Target Rate of Return v. Actuarial Rate of Return

FIPS (6.B) states that “[t]he actuarial rate of return is the key actuarial assumption affecting future Commonwealth funding rates and pension liabilities” and PRIM aims to “reasonably exceed” its actuarial rate of 8.25%. By comparison, the average real return on US equities since 1820 has been just 5.17%.[2] Even though the recent asset-market conditions imply returns considerably lower than the historical aggregates for the type of diversified portfolio PRIM aims to maintain, it is desirable that the fund retain a high target rate of return of 8-10% for its medium- and long-term investment goals. Such an objective seems consistent with minimizing the amount of budget appropriations necessary to fund pension benefits, which is a critical policy goal.

However, using the target rate of return as the assumed rate of return (ARR) in actuarial estimates of liabilities (and thus also of unfunded liabilities) creates a systematic bias towards underfunding and higher long-run costs for a fixed level of benefits, particularly if prevailing market conditions imply considerably lower returns. This practice also

facilitates potential shifting of costs to future periods and hence undermines the goals of effective cost accounting in the provision of public services. A lower ARR would accelerate appropriations for the unfunded portion of liabilities and thus (1) reduce funding costs to taxpayers by compounding investment returns over longer periods and (2) ensure the long-run sustainability of benefits for current and future public workers. Both the target and the actuarial rates of return should be revisited periodically, but this review should reflect medium- and long-term expectations of the return of a basket of asset classes representative of the fund's portfolio allocation.

Requiring target rates of return close to actuarial rates has the perverse effect of promoting both higher cash-flow risks and unreasonably low estimates of liabilities. ARRs should be reduced to 5% and target rates should be set at least 300 bps above ARR.

Both PRIM and PERAC should divorce the target rate of return from the actuarial one. PRIM ought to adjust its investment objectives accordingly, while PERAC should raise its regulatory limit on the spread between actuarial and target rates (IBPM I.3, 840 CMR 18.02(4)). The current cap does not effectively limit risk-taking – instead, it biases boards willing to take more risk towards adopting a higher (and less sensible) ARR. This has the perverse effect of promoting both higher volatility of returns and lower actuarial estimates of liabilities, endangering the liquidity and solvency of retirement funds even in the medium and short run. Ideally, a revision of this policy would also be backed by appropriate amendments to MGL c. 32, making it permanent and mandatory by instituting, for example, an actuarial rate at least 3% below the target rate and thus providing a "solvency cushion" to protect from subpar investment performance.

If excessive risk-taking is a preeminent concern, PERAC can take other – and much more effective – measures such as caps on trailing asset volatility, peer-group-based constraints, age-weighted caps on allocations by asset class, etc. In fact, PERAC's existing regulation already provides a fairly robust framework of restrictions on asset allocations that would prevent most reckless investment decisions if rigorously enforced.

Amortization of Capital Gains and Losses

Currently, 840 CRM 23.01 (pursuant to MGL c. 32 §22(3)(d)) allows pension funds to realize gains and losses from investing activities over five years but restricted within a 10% band around current market value. The most recent changes in the Governmental Accounting Standards Board's (GASB) rules will implement similar amortization schedules nationwide. Ostensibly, the purpose of this approach is to smooth out the effects of market volatility and provide a more consistent valuation of assets and, consequently, of unfunded liabilities. Unfortunately, this method has the perverse effect of deflecting fiscal payments and asset allocation away from the most efficient investment opportunities.

The five-year amortization of capital losses shifts cash inflows for unfunded liabilities away from market troughs, which are the most opportune time to invest. Meanwhile, the lag in realizing gains can also boost government payments at market tops, when

asset prices are higher. These two effects substantially reduce the long-run returns of the pension funds, thus undermining the effort to achieve full funding at a minimal cost to taxpayers. Buying high and selling low is not a productive investment strategy. The five-year amortization process should be repealed altogether to restore mark-to-market accounting.

The five-year amortization of investment returns deflects fiscal payments and asset allocation away from the best investment opportunities. Mark-to-market accounting should be restored and vigorously enforced.

Investment Style Neutrality

PRIM should periodically review allocations among asset managers with different management styles in order to get much closer to its goal of investment-style neutrality (FIPS 8.B.2). A blended strategy between active (single- and multimanager) and passive (index-manager) investments, as expressly adopted by PRIM, seems most consistent with the goal of consistent returns and capital preservation. However, the question remains open as to what the specific blend ought to be. The board should reevaluate the management-style mix based on aggregate risk/return performance and seek more efficacious ways of achieving its objectives as compared to traditional diversified strategies. PRIM's cautious experimentation with new asset classes in recent years is a positive step in this direction. However, it would be beneficial if this mandate were included explicitly in FIPS along with clear rules regarding the selection of investments that may not have traditionally been part of the portfolio. Formalizing the board's cautious approach would improve decision-making and transparency, while providing an important reference point for other pension-fund managers across the commonwealth and the country.

Liquidity

PERAC should adopt a specific policy recommendation on the leverage and liquidity of boards' investments (IBPM IV). In particular, the maximum permitted proportion of illiquid assets should be tied to the board's actuarial expectations of net cash inflows from contributions over the medium term. Thus, smaller funds with older retiree populations should face stricter limits on illiquid investments that involve high short-term volatility/risk and thereby threaten the solvency of the fund. Thus far, PERAC's restrictions in this regard only relate to asset classes and the size of the fund, but age profile (and, by extension, expectations about cash flows) should be an explicit part of the criteria for granting exemptions from this policy. PERAC should periodically develop, publicize and recalibrate specific guidelines for these ratios, allowing boards to adopt a more or less stringent policy. Such an approach would preserve flexibility and local control while improving accountability and limiting excessive risk-taking.

Performance Benchmarking

Selecting a Benchmark for the Retirement Board

Contrary to the assertion of the opening paragraph of IBPM Title VIII, absolute return is more important to the mission of pension funds than peer evaluations are. Relative performance over shorter and longer intervals is indeed vital and should be followed closely and critically analyzed every year. However,

the consistency of the fund's performance with the stated investment-policy goal and the maintenance of sustainable cash inflows and outflows should always be the primary benchmarking criterion.

The primacy of peer evaluations in the private sector is justifiable because asset managers compete with one another for clients. Massachusetts retirement boards, on the other hand, have a regulatory mandate to secure a certain fixed amount of benefits under given assumptions about returns, inflation, etc. Boards with shrinking membership and/or aging beneficiaries should place a substantially larger weight on capital preservation and the short-term return effects on solvency/liquidity than other institutional investors; return relative to peers is of secondary concern. Title VIII should be clear about these priorities and include a rank-ordering thereof.

In this particular case, prioritizing peer evaluations also carries a substantial risk of systematic underperformance. On one hand, such an approach may result in low-balling performance goals because of poor management elsewhere in the system, engendering a race to the bottom. On the other, comparisons can be made with a peer group that is too different (albeit the closest one available), thus biasing the evaluation benchmarks. These concerns apply most readily to the aggregate performance of the portfolio and not necessarily to different investment segments, but should be kept in mind when benchmarking those subspaces as well. Furthermore, preference should be given to investment contractors that apply for their internal purposes benchmarking standards which are at least as rigorous as the ones used by the pension fund. Boards should provide to PERAC and publicize written and specific justification for their choice of benchmarks at any level even – and especially – when, as noted by the IBPM, no clear choice of benchmark exists.

Peer Performance Benchmarks

PRIM compares its performance with other large pension managers with the goal of ranking in the top half of comparable public pension funds, but "expressly recognizes that other funds may have investment objectives and risk tolerances that differ substantially from PRIM's" (FIPS 6.D, cf. IBPM I.4). For these reporting purposes, PRIM currently uses the Wilshire Associates Trust Universe Comparison Service (TUCS), which comprises some 900 pension investment trusts nationwide with over 9,000 active portfolios. PRIM's most recent annual report (FY 2011) states, for example, that its total return over the prior decade ranked in the top quartile of public pension funds with assets over $1bn. Due to its wide scope, this comparison universe says little about PRIM's relative performance with respect to its implicit dual mandate of capital preservation and consistent investment returns above 8.25%.[3] Peer benchmarking can be improved significantly by reducing the discrepancies between PRIT and its comparison group(s), which would also help guide PRIM's updating its asset allocation policy.

Small sample size is a critical problem in performance benchmarking. This issue is often used as a justification to compare to peer universes that are too broad or otherwise "biased" in terms of their fundamental characteristics. One approach to avoiding the sample-size problem is to establish and track multiple reference groups for the same parameter as well as different groups for

different parameters. The particular group composition may vary from year to year and should be modified on the basis of the underlying selection variables. However, strict criteria should be established and observed in that updating process in order to maintain meaningful and consistent benchmarks.

The peer groups for performance benchmarking should be selected not only on total assets under management, but also on critical cash-flow fundamentals such as fiscal payments, funding levels, duration structure of the liabilities and projected pension outlays over the medium term.

A key distinguishing feature of pension funds is that they need to secure sufficient cash flows to service their current outlays to retirees without having to engage in fire sales of assets. In turn, this relates to the budgetary capacity of the corresponding governmental unit. Therefore, depending on the availability of a sufficient number of peers in the resulting group and of relevant data, reference groups can be selected on several (combinations of) characteristics such as:

- investment policy and asset allocation (including notable restrictions on asset holdings and/or turnover);
- duration of pension liabilities;
- annual inflows/outflows as percentage of assets and underlying liabilities;
- pension outlays as proportion of the corresponding governmental unit's budget, tax receipts, GDP, etc.;
- total assets under management;
- funding level of the participating retirement plans;
- amortization schedules for unfunded liabilities (e.g., direct appropriations as annual percentage of assets and/or unfunded liability, funding deadlines).

These criteria are organized in descending order of importance, taking into account the fact that regulatory and other contextual restrictions on investment policy in practice often have to take precedence over considerations related to the risk level implied by the distribution of beneficiaries.

PRIT's investment objectives most closely resemble those of a hedge fund in the private investment world: its prime goal is to generate some target return consistently over time with minimal volatility. Therefore, PRIM ought to study the possibility of using well-tailored groups of hedge funds as complementary or even core benchmarking reference points. If the board opts to experiment with this approach, due care should be taken to ensure that the selected hedge funds have governance structures and internal incentives that do not imply short- or longer-term investment strategies and general portfolio allocations that are substantially different from PRIM's.

In addition to returns, PRIM's investment performance should be compared over (in order of relative importance):

- underlying cash flows (e.g., forward guidance on cash flows by companies whose debt or stock are held in PRIT);
- leverage ratios for underlying assets (e.g., the debt ratios of companies whose stock or bonds are held by PRIT);
- asset volatility;
- liquidity (e.g., dollar volume in the corresponding asset market, average and/or median asset turnover in the corresponding asset class overall);
- modified duration and convexity (for fixed income);

- direct cash flows (dividends, coupon payments, etc.);
- expected performance in adverse tail scenarios (stress testing);
- asset churning and custodial costs.

Such a comprehensive approach would not only promote a more balanced and rigorous review of the fund's performance relative to its peers, but also supply helpful information for retirement boards statewide deciding whether to invest through PRIT or use their own independent strategies. Positively, these considerations must already play a substantial role in PRIT investment decisions, but they need to be analyzed and publicized in a systematic and transparent manner. Since PRIM already reports many of these variables on its financial statements or has the information readily available for the purposes of day-to-day investment management, this next step would not constitute an overwhelming administrative burden.

Investment benchmarks should take into account the level of risk based on the portfolio's underlying cash flows and their duration, liquidity and stress-test performance.

Furthermore, the fund's benchmark comparison goals should be raised to ensure more dynamic and results-oriented asset management[4] – 80th-90th percentile of its peer group if the latter is larger than 10 and 70th-80th percentile otherwise. This does not necessarily imply more risk as long as the fund does follow multiple indicators (i.e., not only returns), as recommended, and over multiple time horizons, as it already does. In no circumstances must it be overlooked that the fundamental purpose of implementing rigorous benchmarking metrics is not to judge an investment manager short-term, but to provide a consistent basis for the continuous improvement of the investment policy, the strategic planning and the staffing decisions driving the fund's performance. Setting the target level so high actually corresponds just to not underperforming the market; most mutual fund managers do get smaller returns than the market aggregates while the vast majority of the rest outperform temporarily due to sheer luck.[5] Accordingly, PRIM ought to reconsider its management approach whenever it is unable to produce returns at least as good as the broader market aggregates.

Inflation Benchmarking

PERAC seems to recommend that boards provide a real rate of return that exceeds inflation by 3-4% annually (IBPM I.2). That goal is too low, especially when considered over extended periods. For example, 4% is well below recent returns on US equities, which have been about 8-11%.[6] While that may be too optimistic of an expectation for the future, a minimum of 5% return would probably be necessary to justify a fund's investment expenses. If, over time, an investment manager cannot provide a return better than the long-term broad-market average, the funds can simply be allocated to several index-tracking securities, eliminating administrative overheads. A single systemwide return target may not be optimal in the first place – return benchmarks should be adjusted on the basis of the age profile of each retirement board's beneficiaries and/or the expected cash outlays over the medium term as well as inflationary expectations for that period. What is more, retirement boards

currently assume real rates of return far above 4%, which adds to the inconsistency of this mandate.

Asset Allocation

Methodologies of Asset Allocation

Title IV of IBPM should require asset allocation plans to be based not only on projected returns, volatility and market correlation, but also uncertainty-related assessments such as: (1) accelerated discounted cash flows from investments; (2) stress testing in extreme scenarios; (3) projections for necessary fiscal subsidies in those scenarios; (4) periodic asset revaluation based on liquidation or replacement costs; (5) due diligence for major shareholdings based on PERAC's criteria for selection of investment managers (IBPM VI); etc. These assessments may not necessarily be founded on specific PERAC mandates, but retirement boards should at least be required to draw up investment and reallocation policies based on these "hard" fundamentals, not only on quantitative measures of risk such as beta and implied volatility. Such policies should specify when and how the board will recalibrate its portfolio if, for example, book-value criteria are not met or the fund does not perform satisfactorily in stress tests.

These considerations are often sidelined because of their complexity, but they are particularly important in the case of pension funds because of the fiscal and societal impact of their success or failure. They should be brought to the attention of board managers forcefully and explicitly. One recommendation is to include them as another "critical component in determining the success of an asset allocation process" along with "whether the system is achieving returns commensurate with the risk" (IBPM IV, also 840 CMR 18.02). As repeatedly indicated by PERAC in its documentation, an overly "aggressive" portfolio is not the only danger to long-term cost containment and solvency. The inclusion of fundamental valuation and planning in the calibration process will help boards reduce the uncertainty surrounding their viability in various situations, thus creating leeway to take on more risk rather than less, if desirable.

> The boards' annual reports should explain directly and in detail the calibration of their asset allocation and its implied risk level to their cash-flow projections. They should also develop stress-test scenarios to be able to weather prolonged market underperformance or lack of adequate government funding.

Boards' Asset Allocation v. Policy Targets

The IBPM's benchmarking guide opens with the misleading suggestion that "[a]n allocation return will differ from the policy return if the board's existing asset allocation is not consistent with its long-term policy target" (I.1). Much like with peer benchmarks (IBPM I.4), even a perfectly calibrated allocation can underperform over extended periods; thus, boards would be ill-advised to use such return comparisons as a decisive criterion when fine-tuning their asset allocations in accordance with stated policy. Macroeconomic and industry fundamentals as well as the underlying cash-flow structures of the corresponding assets would be a much better and more reliable guide than past returns in adjusting allocations to policy objectives.

Traditional diversified investment policies are typically premised on historical returns (and, for the better ones, to some extent on historical fundamentals), but the performance of the vast majority of such strategies is highly correlated with the long-term performance of broad market aggregates such as the Russell indices. This approach is not a particularly effective protection in economy-wide downturns, when correlations among asset classes skyrocket[7] for both psychological reasons (investors panic and run for liquidity, selling across the board) and technical reasons (e.g., rising counterparty risk; impending margin calls; soaring cover costs for shorts, options, forwards and other hedging instruments). PRIM and other fund managers should not pursue diversification for its own sake, but rather through investments that have a solid capital cushion and can generate positive cash flows even in recessionary conditions to balance out the more growth-oriented parts of the portfolio.

Such a strategic shift involves picking more individual companies (in terms of shares, bonds or other securities) rather than investing sectorally or by asset class. If such an approach is adopted for a portion of the portfolio, the primary investment goal should be capital preservation (including potential inflationary pressures in the more distant future), while maintaining the return mandate over the medium and longer term. Opportunistic investments with these characteristics are mostly available among mid- and, to a lesser extent, small-cap companies, as well as in various types of corporate and sovereign debt, so boards without the necessary administrative capacity and investment experience ought to proceed with added caution.

Elements of Risk and Risk Management

Title XI of IBPM suggests that boards "should not seek to avoid [. . .] fundamental investment risks since expected returns are usually positively related to assumed risk" and they "cannot achieve high returns without taking risk." This injunction is based on rather dated views; investments that provide market-beating returns, especially over the long term, tend to carry comparatively low risk.[8] Boards should indeed take into account trailing measures of asset volatility as part of their strategic planning, particularly with respect to effective cash-flow management and the maintenance of enough liquidity to meet their obligations. However, implied volatility is not necessarily correlated with the returns on a particular asset; it is but one among many asset characteristics to be considered when making investment decisions.

Portfolio allocation should be premised upon fundamental weighting, using real and projected operational cash flows rather than just market capitalization.

Portfolio risk is related not only to the desired return, but to current market conditions (especially the macroeconomic and the competitive environment), asset liquidity and underlying cash flows, and the availability of other investment opportunities. Traditional diversified portfolios typically do not provide the protection and returns required by the funds' performance mandate. Asset correlations tend to be very high during market slumps[9] and very low during bubbles, which effectively defeats the purpose of this approach and makes it less effective than others. Boards that choose active management for the majority of their assets,

in particular, should be discouraged from traditional diversification for its own sake in that portfolio segment. For actively managed accounts, diversification should occur along fundamentals such as liquidity and/or cash flows, geographic location and other tangible factors, not the asset's implied volatility, beta or any other imputed measure. Passively managed accounts offer ample traditional diversification at a much lower cost for risk-averse boards that do not have the capacity or willingness to conduct or purchase the requisite fundamental analysis.

An acute investment risk that pension funds face concerns the maintenance of sufficient cash flows to avoid fire sales of assets at market troughs. In view of this fact, diversifying with respect to the availability of payments such as bond interest and stock dividends is much more important than reducing the short-term risk on the total return of an asset. This is particularly true because of the funds' longer-term investment horizons and annual (as opposed to shorter) reallocation schedules. The outcomes of a long-term investment strategy with low leverage are dominated by uncertainty, not by risk. Quantifiable volatility of total returns can be dangerous for a pension fund mostly if its short-term liquidity is low – i.e., if there is not enough free cash flow from assets to maintain current payments.[10] Long-term returns (and solvency) are predicated upon the uncertainty of outcomes in consequence of business decisions. If uncertainty is properly managed and cash flows maintained, the capital-preservation mandate will be met without the primary focus being on technical diversification.

Whether quantitative or qualitative, boards' diversification should be at least in part based on fundamental allocation apportionment. Using cash flows, sales or other fundamental measures of a company's relative economic size can produce more reliable and accurate weights for their asset allocations. Fundamental apportionment reduces asset churning because the indicators of relative size in the portfolio do not normally fluctuate as dramatically as asset prices. Furthermore, this strategy creates an automatic buffer against overinvesting in crowded asset classes (a leading source of style drift), which typically produce lower returns than the broader market. If the capitalization expansion is not matched by a fundamental expansion in the corresponding real market, the fundamentally weighted allocation policy will constrain the fund away from investing further in the "fizzy" asset class.

Assumptions about Returns by Asset Class

PERAC or PRIM should annually publish a cheat sheet of assumptions about returns by asset class in order to aid retirement boards that do not retain investment consultants. Additionally, each individual board should annually set and publish its own return assumptions – with written justification – and a description of the ensuing asset reallocation. Retirement boards' asset allocations and return assumptions often contradict actuarially assumed and target rates of return as well as historical averages. PERAC should require, review and enforce the logical consistency of allocation policy, expected returns and target return.

Real Estate

Real estate represents an important asset class for the institutional investor with longer time horizons and some pension funds have experimented with this segment, although very cautiously. When returns from

other assets are subpar, real estate can be a comparatively attractive generator of free cash for long-term investors, especially in view of the fact that a depressed real-estate market tends to induce higher rental demand, rising rent/income ratios and, therefore, higher intermediate cash flows. The major disadvantage of real estate is that it is subject to multi-decade price trends and, arguably, is much more illiquid and difficult to value than other assets. Hence, a particularly high level of analytical sophistication is required.

PRIM and the rest of the public pension managers in Massachusetts should look to utilize more opportunities in this sector, but this should be done only with rigorous risk management and due diligence on underlying assets (since real-estate exposure is typically vested in REITs or other investment vehicles). From the perspective of asset reallocation and valuation, PRIM should employ a basket of all available actuarial methods:

- replacement cost on location or regionally;
- present value of operational and liquidation revenue with accelerated discounting of cash flows;
- expected sale value (mark-to-market) on location or based on broader regional aggregates.

Wide divergence among these three estimates can signal underlying problems with property management, acquisitions or the geographic location, as well as potential further opportunities in the corresponding region and market segment. Of course, PRIM should continue to take into account the attendant administrative expenses and the availability of provider data in improving its real-estate investment policy along those lines.

Hedge Funds

PRIM should reconsider its allocation and choice of hedge-fund managers in the Absolute Return program (FIPS 9.C). The benchmark rate of 4% over Treasury bills will likely remain well below the fund's aggregate target rate of return of 8-10% in the context of persistent deflationary conditions. By comparison, bonds returned just over 6% annually in 1929-1939, the last period of prolonged deleveraging that could serve as a suitable point of reference for the current situation. In these conditions, T-bills are unlikely to return as well as the broader market because they already are at extremely low yields; the yield on the 10-year note has fallen to under 2%. The potential upside in the US government debt market is relatively small, whereas a sudden spike in inflationary expectations would likely hurt the holders of government debt more than those of other assets such as equities. Hence, this benchmark is inconsistent with PRIM's announced targets and broader objectives. Since hedge funds by definition execute an absolute-return strategy, coherent investment policy would require that PRIM: (1) adjust its expected rate of return, (2) change its allocation to hedge funds with higher absolute return targets (and more risk) and/or (3) close the program and reallocate the assets to other classes that are consistent with actuarial goals.

Private Equity

PRIM's decision to expand its portfolio into private-equity investments is a significant opportunity to provide higher returns consistent with the fund's investment strategy. However, the current benchmark of the Russell 3000 + 3% (FIPS 10.A) is not particularly suitable for the objectives of a pension fund, especially one that

is substantially underfunded. The one-year return on the Russell 3000 has been 3.57% with annual range since 1995 of about ±37%.[11] The high volatility of the benchmark undermines the usefulness of any performance evaluation based on it and does not seem appropriate to the consistent-return mandate that pension funds ought to adhere to.

Furthermore, private equity in general has exhibited very high correlations with the broader US equity markets in recent years.[12] It is also very difficult to value and generally far less liquid than other types of assets, while commanding higher management fees than investments in publicly traded companies. Closed-end funds can take years before they generate enough free cash flow to begin to pay out dividends. These characteristics imply that if a retirement fund were to invest in this space it ought to require a substantially higher return than from equities. Most funds would be better off avoiding it altogether because they may well be late to the party – an overcrowded market segment subject to style drift.

For these reasons, the PRIM board should use a different index benchmark for its private equity investments. The benchmark changes should be revisited over the medium term as the board rebalances PRIT's private equity holdings and gathers enough experience to choose an index or other benchmarks consistent with the longer-run composition of this segment of the portfolio. Adopting actuarial valuation requirements based on liquidation, market and cash flow value with accelerated discounting similar to those for real-estate lots may also help by reducing the uncertainty associated with such illiquid investments. More rigorous benchmarks will almost inevitably reduce fund exposure in this investment segment.

Independent v. PRIT Management

PERAC recognizes as the first reason a board may decide to invest on its own a "belief in the tradition of independent, local control" (IBPM II.1a).[13] Such language ought to be struck from the IBPM as redundant and even misleading. It creates a false dichotomy between local autonomy and investing through PRIM. Maintaining local control over a board's holdings is perfectly consistent with investing most of them in PRIT accounts. A board that is not comfortable with the five-year commitment of a participating system can make a partial investment, which provides a wide choice of asset segments and considerable flexibility regarding the withdrawal of funds whenever the board is dissatisfied with PRIT's investment strategy.

Furthermore, investment decisions and their impact on retirees and the public fisc should not be affected by any trustee's personal beliefs unrelated to investment performance and by his or her belonging to one set of traditions or another, including religion and political affiliation. Board managers should rather be encouraged to develop an institutional culture premised upon the highest standards of public service and professional investment management, as required by PERAC's own regulation 840 CMR 1.01, 3.01-2, 17.02(2) as well as 26 USC §401(a)(1)-(2), wherewith this statement creates an express legal conflict.

Fund Governance

Transparency

PERAC ought to add a regulatory requirement improving the transparency of decision

making. Retirement boards should be explicitly required to publish in a dedicated section of PERAC's website:

(1) their minutes, within two weeks of any board meeting;
(2) board or committee decisions as well as specific reasoning for the evaluation and hiring of a particular consultant, custodian or asset manager, within two weeks of said decision;
(3) a breakdown of asset allocations as well as a ten-year projection of cash flows from investments and government appropriations and to current and future retirees.

These requirements will not only improve the accountability of local pension funds, but – more importantly – they will bring critical managerial tasks into the boards' focus. Not reporting these facts regularly and readily to the public undermines taxpayers' gaining a better measure of the costs of public pensions and the employees' keeping a keen eye on the performance of their retirement plans. Since boards are already required to prepare similar documents by PERAC's and other regulations, this boost to transparency will not entail any significant administrative costs.

Proxy Voting Policy

PERAC should require retirement boards statewide to prohibit contractually custodians and investment advisors holding shares on account from voting them without express and shareholder-meeting-specific directions from the fund. This will not affect funds' autonomy because (1) funds can still retain third parties to vote their shares or abstain in order to keep proxy costs low and (2) they ought to have already been participating in the governance and oversight of companies where they hold a substantial interest. Such a measure would at least marginally encourage boards to take a more active interest in the underlying performance of their assets, while enabling other investors to pursue strategic changes and higher profitability whenever the board has too little interest to do so itself. PERAC should be particularly firm about its existing requirement that boards develop, publicize and implement a proxy-voting policy as an integral part of their fiduciary duties.

Competitive Process

PERAC should set a regulatory floor on the number of qualified bidders in the selection of investment advisors, custodians and other vendors – a minimum of five participants for every account to be advanced after the initial review of the offers (without necessarily interviewing all of them for further consideration). If a board has not attracted sufficient vendor interest, this may be a red flag that:

(1) the opportunity has not been advertised in an appropriate manner;
(2) the selected type of investment class or style is too marginal or risky;
(3) the allotment is too small to justify the administrative expenses;
(4) legal and/or other contextual constraints present too much uncertainty in terms of fiduciary relationships or conflicts of interest;
(5) the consultant (if any) has not conducted enough outreach to potential bidders or has otherwise mishandled the tender process;
(6) the board has communicated unusual or unfeasible demands for the level of client service;
(7) the board is not perceived as a sufficiently important client, so it should consider

investing in PRIM instead, as it may not be able to ensure good client service elsewhere;

(8) prospective bidders are skeptical about the board's competence or track record in the particular type of investment and/or fiduciary relationship, in which case the board must consider a review of its internal practices, including, but not limited to, liquidity and solvency, investment strategy, governance, transparency and communications with vendors.

The emphasis on vendor competition should not create a bias toward actively managed investments, which are still more widely available in the marketplace. Due attention should be paid to the market-wide availability of a particular product, as it may be limited. If a board subsequently decides to override the floor on the number of qualified bidders, it should provide detailed justification and acquire an exemption from PERAC before executing a contract with the winning bidder. Regulations should automatically void any such contract signed without prior approval and mandate the dismissal of the responsible fund managers.

Investment Expenses (Asset-Based Management Fees)

PRIM pays asset-based management fees only on a small proportion of its portfolio, composed mostly of index-tracking accounts (FIPS 17.B). The board should redouble its commendable effort to avoid this costly practice (which is often riddled with conflicts of interest) by adjusting the compensation policy for passively managed lots. Many index-tracking securities are not designed and managed efficiently[14] and compensation as well as selection ought to and can be linked to the tracking effectiveness of the product. As a major institutional investor, PRIM can periodically examine the managers' expenses and drop managers who hold too much cash, churn securities (cf. FIPS 18.A) or pay inflated trading fees to finance other expenses (cf. FIPS 18.C). PRIM should also impose a 5-20 bps limit on the tracking error (depending on the volatility, composition and underlying liquidity of the particular index being tracked) and tie it to compensation or eligibility. This is consistent with PRIM's goal that the incurred fees rank among the lowest paid to any manager for comparable investment management services (FIPS 17.C). Overall, PRIM's investment-expense policy should aim to meet or exceed the standards of the Federal Employee Retirement Income and Security Act (ERISA) rulebook. PERAC should require the rest of the pension funds in Massachusetts to adopt similar policies.

PERAC should impose a strict limit on the tracking error of index-tracking securities and investment vehicles.

Selecting an Investment Manager

IBPM Title VI deserves particular mention for its thoroughness and focus on non-quantitative indicators that are often discounted or completely overlooked by investors. A potentially important but missing evaluation attribute is the internal compensation policy of the investment manager. PERAC should add under this title a section on the compensation policies affecting the fund managers and their relevance for the costs and performance associated with the particular product and asset class. Compensation policy may create internal incentives for excessive risk-taking, poor compliance standards or asset churning. It may also raise red flags about internal

politics – for example, conflict between account managers and analysts – that can undermine client service and investment performance.

IBPM should expressly call attention not only to the investment philosophy and process of the manager(s), but also to their approach to updating it. Are they periodically reevaluating their investment philosophy even if they are not changing it much? A critical approach to the organization's own processes signals both commitment thereto and ability to move quickly, innovate and adopt the most cutting-edge practices. This is one of the most effective organizational bulwarks against complacency and poor compliance and ought to be considered an essential criterion in the manager selection process.

An investment manager's critical approach to internal processes signals both a commitment thereto and an ability to move quickly, innovate and adopt the most cutting-edge practices.

Continuous Improvement (Kaizen)

Furthermore, continuous improvement should be implemented by the retirement boards themselves and they should publish an annual report on their own process evaluation as part of their transparency policy. The IBPM should explicitly encourage boards to seek out additional information on the various decisions they have to make and particularly on their internal processes, while keeping a critical eye on their use of PERAC's recommendations. The IBPM provides a vital and well-developed set of best practices, but boards should be careful not to take it (intentionally or not) as an exclusive reading on investment decisions. They should aim to develop their own approaches, innovate and seek out additional counsel, adding to their experience and value in asset allocation and manager selection. As 840 CMR 17.02(3) states, "[f]iduciaries shall act with competence and shall strive to maintain and improve their competence and that of others in their profession."

Conclusion

What distinguishes the competent investment manager is that his or her decisions rely on rigorous evaluation processes firmly rooted in the investment strategy, which is in turn fully consistent with the investor's individual objectives. Whereas the Massachusetts pension systems' existing set of policy statements and regulations is rather comprehensive, it is somewhat lacking in the clarity and consistency of the goals it establishes for pension funds. This is a rather critical shortcoming, which must be rectified without delay. ARRs must be adjusted to reasonable levels; target returns and investment benchmarks should be brought in line therewith.

What distinguishes the *exceptional* investment manager, however, is that the continuous improvement of his or her process is a most fundamental part of that process. As in many other fields dominated by complexity, the financial practitioner may be tempted into blind conformity with a preset array of standards and practices, whether to simplify decision-making or to ensure compliance. While analytical rigor is an essential ingredient of effective investment management, the uncritical application of the moment's established methods is particularly perilous in this field because it is likely to cause severe style drift. Those who heed the

siren call of such false comforts are bound to sway with the vagaries of the market. Many of the problems identified heretofore are most likely the consequence of transferring indiscriminately private-sector investment practices – many of them of questionable value anyway – into the realm of public pensions. Unsurprisingly, Massachusetts pension funds suffered massive losses in 2008-2009 and, although there cannot be absolute safety amid the uncertainty of the market, managers *can* do better.

Whereas a critical decision process ensures consistent investment policies and objectives, institutional transparency is the best setting for that sort of critical decision process to flourish. This is not merely an argument about accountability. If continuous improvement is established as a core component of the organizational mission and managers are required to report a clear investment thesis promptly and regularly, the consistency and coherence of decision-making would naturally become a centerpiece of retirement boards' operations. Such a transparent and challenging work environment would also be highly unattractive to individuals who are prone to operating in their comfort zone or are looking for a sinecure where they can moor far from public scrutiny. Conversely, the job of the public pension manager would become much more visible and alluring to appropriately skilled and driven professionals seeking a high-profile position with copious amounts of responsibility.

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Endnotes

1. PRIT is the Pension Reserves Investment Trust created by MGL c. 32 and managed by PRIM.

2. Reid, Jim and Nick Burns, "Long-Term Asset Return Study." London, UK: Deutsche Bank 2010, http://www.etf.db.com/UK/pdf/EN/research/researchfixedincome_2010_09_13.pdf, accessed 2012.07.17.

3. This goal rate of return may be too high given historical returns and market conditions; cf. Buffett, Warren. "Chairman's Letter," *Berkshire Hathaway Annual Report 2007*, http://www.berkshirehathaway.com/2007ar/2007ar.pdf, pp. 18-19, accessed 2012.11.05.

4. In no way is this a suggestion to rebalance asset allocations more frequently than once a year.

5. Barras, Laurent, O. Scaillet and Russ R. Wermers. "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas." Swiss Finance Institute Paper, 2008, http://ssrn.com/abstract=869748, accessed 2012.07.17.

6. This number is based on a 20-year average and therefore is contingent on the weighting method used to aggregate.

7. Ennis, Richard M. "The Uncorrelated Return Myth." *Financial Analysis Journal*, November/ December 2009, http://www.cfapubs.org/doi/pdfplus/10.2469/faj.v65.n6.6.

8. Baker, Malcolm P., Brendan Bradley and Jeffrey Wurgler. "Benchmarks as Limits to Arbitrage: Understanding the Low Volatility Anomaly." *NYU Working Paper*, March 2010, http://ssrn.com/abstract=1585031, accessed 2012.07.17.

9. Cf. Ennis 2009.

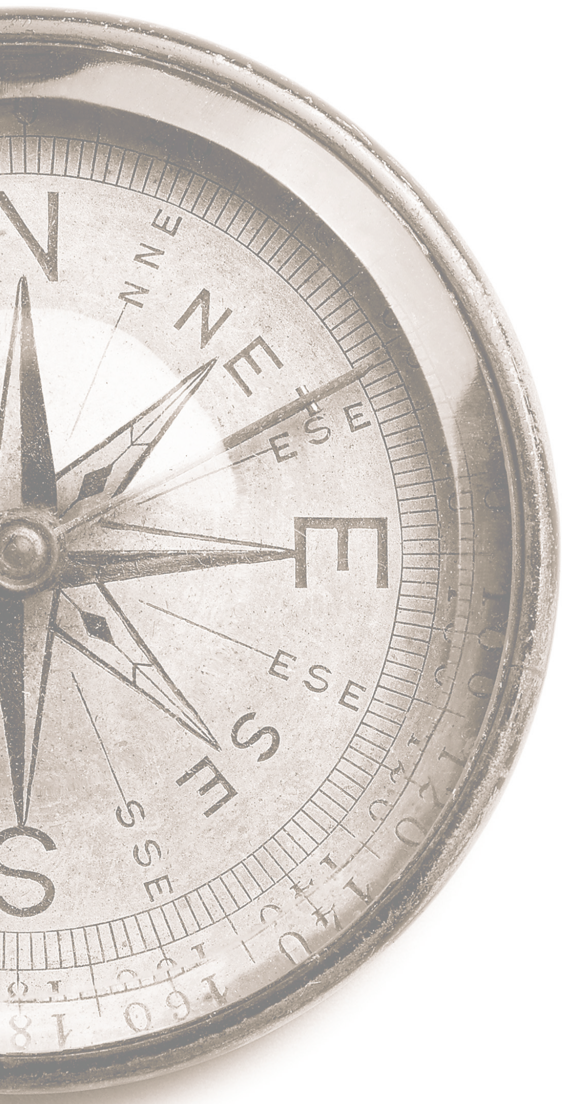
10. Massachusetts retirement boards are prohibited from using leverage by PERAC.

11. Index returns from Russell Investments, http://www.russell.com/indexes/data/calculator/index_calculator.asp.

12. Ennis 2009.

13. For ease of use, references to list items under headings where multiple lists occur were subscripted with letters in their order of occurrence.

14. Tergesen, Anne, and Lauren Young. "Index Funds Aren't All Equal." *Bloomberg BusinessWeek*, 2004.04.19, http://www.businessweek.com/magazine/content/04_16/b3879125_mz070.htm, accessed 2012.06.22.



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