

Implications of risk tolerance on establishing an effective investment strategy for public pension plans

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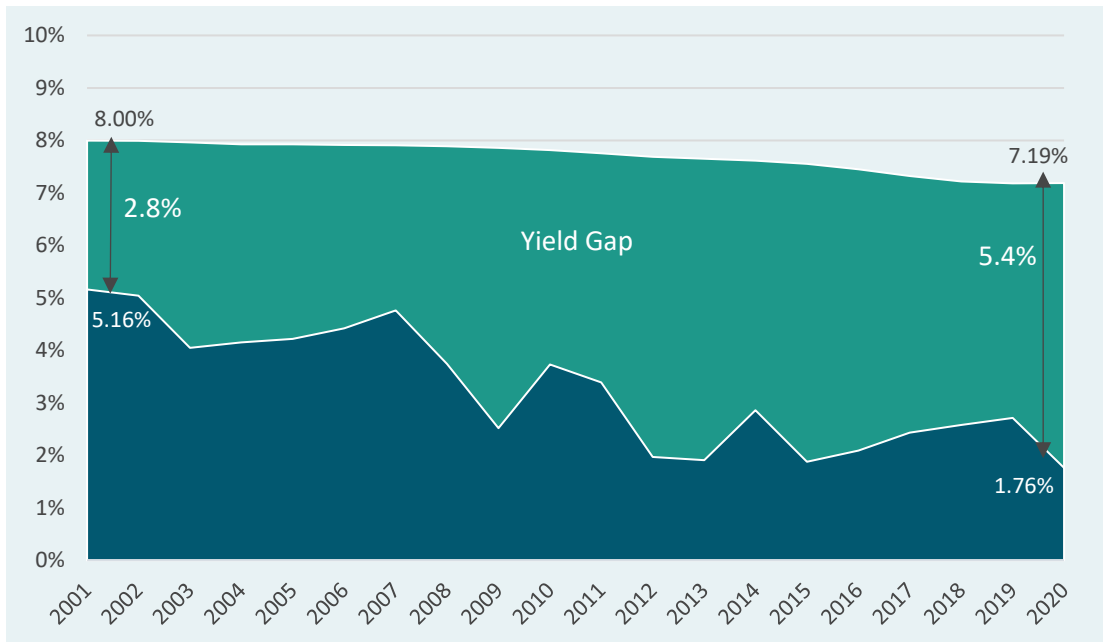
Executive summary

While a strong rebound in risk assets has occurred since the Global Financial Crisis, the funded status of many public pensions has stagnated. The future health of these plans is dependent on many factors and faces many risks, including low prospective returns, unfavorable plan demographics, and stressed plan sponsor financial conditions. This paper will explore these risks and provide a framework for discussion and evaluation designed to ensure a plan's investment program is appropriately aligned with its risk tolerance. Although we focus on public pension plans here, with modest adjustments the described approach can be applied to any institutional investor with well-defined investment objectives and liabilities.

Introduction

It is no great secret that interest rates have been on a secular decline since the early-1980s after Paul Volcker's war on inflation pushed short-term rates to nearly 20%. Today, by comparison, the Fed Funds rate is targeted between 0% and 0.25%, and the 10-year Treasury is hovering around 1.6%. Unfortunately, as interest rates fell, pension discount rates barely budged, leading to a widening "yield gap" between what plan fiduciaries expect to receive from the market and what the market can realistically provide (Fig.1).

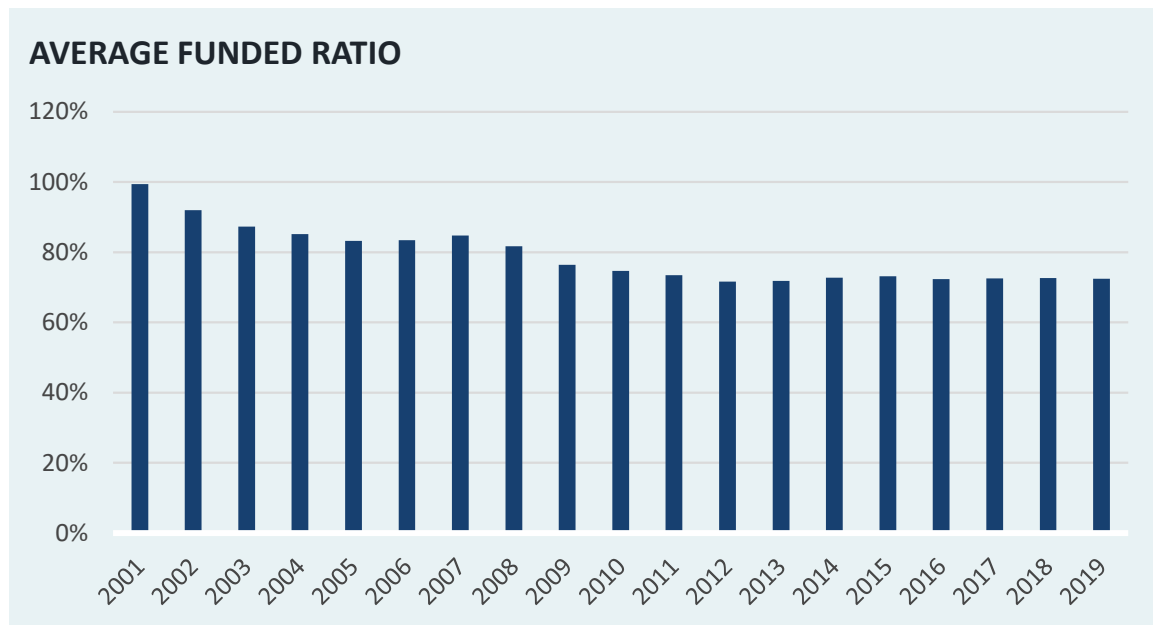
Fig. 1



Over the past 20 years, the yield on the 10-year Treasury Note has fallen more than three percentage points, from just over 5% to less than 2%¹. Over the same period, the discount rate for public pension plans has dropped only marginally, from 8% to just above 7%². As risk-free rates have dropped, and risk premia have compressed, future expected returns have come down to well below the assumption rate for most public pension plans. In fact, a traditional 60/40 portfolio is expected to earn less than a 5% nominal return over the next 10 years, based on most capital markets forecasts.

Funding levels deteriorated over the same period, resulting from two significant drawdown events (i.e., the bursting of the tech bubble and the mortgage meltdown), and they have remained stubbornly low for the past decade (Fig.2)³.

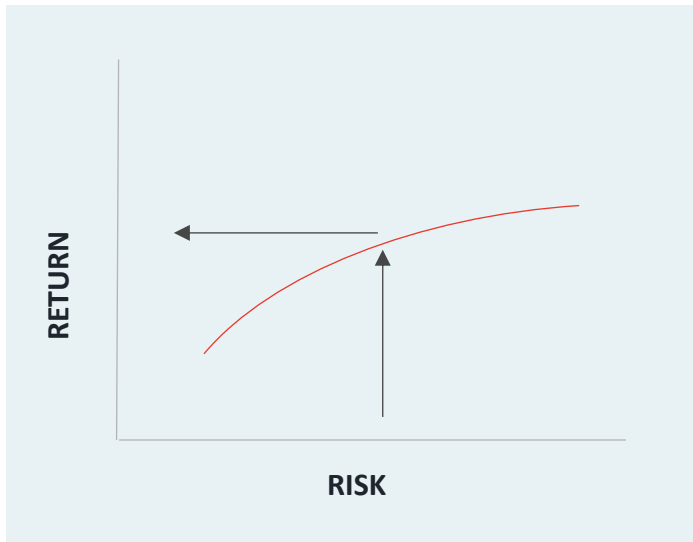
Fig. 2



The extremely difficult challenge faced by many Trustees under these circumstances is how to improve their plan's impaired fiscal condition in an environment of low expected market returns.

The natural response for many is to increase portfolio risk in order to drive higher expected returns. The obvious problem with this approach is that with higher risks come higher drawdowns, which can lead to a downward spiral of ever-increasing pension cost and the crowding out of other budgetary priorities. This natural tendency has been broadly applied historically, as otherwise thoughtful plan fiduciaries have put the cart before the horse, i.e., considering return as the primary objective with risk as a residual output. Instead, they should be optimizing return for a pre-determined acceptable level of risk (Fig. 3), while also considering the constraints introduced by the practical reality of the plan sponsor's financial position.

Fig. 3



Geddes et. al. of The Pension Practice Council advocate a similar approach in their Issue Brief entitled, Asset Allocation and the Investment Return Assumption⁴. They state the asset allocation and return assumption should be based on a thorough risk assessment that includes:

- size of the plan liability and asset pool, relative to plan sponsor resources;
- expected net cash flow;
- investment time horizon defined by expected benefit payments for current members;
- financial strength of the plan sponsor(s); and
- inflation sensitivity in the benefit promise.

The remainder of this paper deals with the difficult task of assessing a plan's risk tolerance with a reasonable degree of accuracy and aligning the investment strategy with said risk tolerance to deliver maximum return for a given level of risk, rather than the other way round.

Risk tolerance assessment

Assessing risk tolerance is as much art as it is science, although using a formal, disciplined, and repeatable approach provides the best opportunity to achieve the most appropriate outcome.

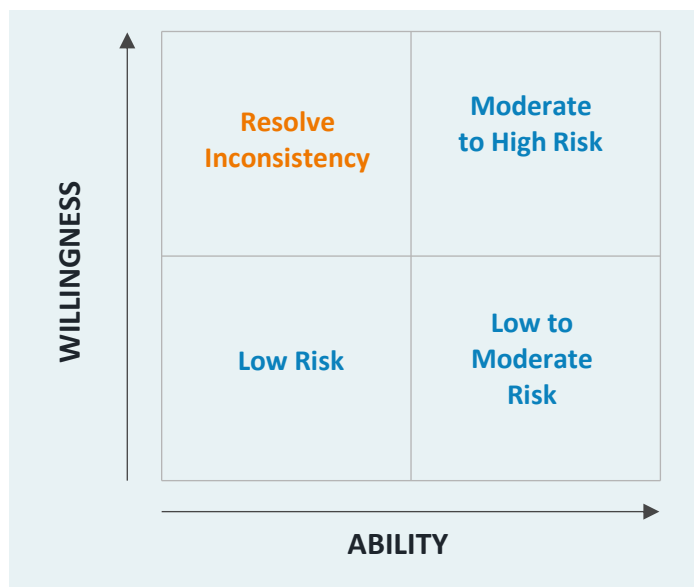
When assessing risk tolerance, one must consider both Willingness and Ability to incur risk. Willingness can be described as the collective predisposition of the Board toward risk and can best be attained through a disciplined process of surveying each individual Board member followed by a facilitated session with the full Board to reconcile differences and circle in on an aggregated consensus of where the Board stands as a group.

The survey can be effectively delivered remotely using an on-line app such as Survey Monkey, but experience shows it is better delivered through one-on-one interviews to provide the opportunity for follow-up questions to gain a deeper understanding of each individual's perspectives. Survey questions cover topics such as the depth of Trustee understanding of basic risk concepts, as well as individual perspectives on portfolio structure, governance and delegation of authority, appropriate response to severe drawdowns, and views on peer and headline risk, among others. Each question is designed to provide data to help assemble an overall sense of how much risk each individual is willing to take in the investment portfolio. Once individual risk tolerance is assessed, the data is compiled and aggregated into a general heuristic of the group's willingness to incur risk, which must then be reconciled and refined through facilitated group discussion.

Ability to incur risk is more about plan and plan sponsor health and can be measured somewhat more quantitatively than Willingness. Insight into Ability is gained by evaluating plan metrics, e.g., funded status, cash flows, contributions as a percentage of pay. With respect to plan sponsor health, broad economic and financial analysis can yield important insights into the potential for support during difficult times. Economic growth, economic base and employment diversity, debt and debt servicing levels, credit ratings, and population growth all factor into the assessment.

The final step is to combine Willingness and Ability into an overall determination of risk tolerance, which is then used as the primary input in the process for developing an appropriate investment strategy. A simple framework for reconciling Willingness and Ability is shown in fig. 4.

Fig. 4



Notably, a summary review of data from state pension plans across the country shows a broad range of metrics, which would imply a broad range of return objectives. However, the range of actuarial assumed rates of return for those same plans was relatively narrow⁵.

Metric	Low	Median	High
Funded Ratio	35.60%	73.20%	100.10%
Active to Retiree Ratio	12.90%	119.10%	405.30%
Credit Rating	BBB-	AA	AAA
Discount Rate	6.50%	7.20%	7.75%

Investment strategy development

Once risk tolerance is heuristically defined, it becomes an input into the investment strategy development process, using an asset/liability framework as the primary evaluation tool. Liquidity analysis is important as well to ensure any allocations to illiquid, private market investments are properly supported. Insights gained from Trustee interviews and the consensus-building exercise described above become guideposts for developing model portfolios. Deterministic and stochastic modeling techniques incorporate expected return outcomes and forecasted liability streams, which then provide forecasts for key metrics, such as plan funded ratio and contributions as a percent of pay. Geddes et. al. are instructive here as well and prescribe suggested evaluation criteria to include:

- The likelihood of the funded status dropping below x% during the next N years;
- The likelihood of the contribution as a percent of payroll increasing above y% during the next N years; and
- The likelihood of the contribution as a percent of payroll increasing by z% in a single year during the next N years.

Consideration of remediation strategies in alignment with risk tolerance is also appropriate during the investment strategy development process, and a sample is provided below⁶.

Scenario	Conditions	Possible Strategies
Strong plan; strong sponsor	<ul style="list-style-type: none"> — Well-funded — High active/retiree ratio — Financially healthy plan sponsor 	<ol style="list-style-type: none"> 1. Reduce risk, preserve funded status, re-evaluate when markets correct; tighten actuarial assumptions; payoff POB; -OR- 2. Increase risk, reduce financial burden on sponsor but expose plan & sponsor to drawdown; tighten actuarial assumptions; payoff POB; fund a contingent “reserve”.
Challenged plan; strong sponsor	<ul style="list-style-type: none"> — Underfunded — Negative cash flows / support ratio — Financially healthy plan sponsor 	<ol style="list-style-type: none"> 1. Pension obligation bond to utilize sponsor’s financial health to improve the funding of the plan; -AND/OR- 2. Increase (or maintain) investment risk hoping returns will solve the problem, exposing the plan to potential drawdown.
Challenged plan; challenged sponsor	<ul style="list-style-type: none"> — Poorly funded — Negative cash flows — Low active/retiree ratio — Financially unhealthy plan sponsor 	<ol style="list-style-type: none"> 1. Reduce risk to guard against any further drawdown, review flexibility of actuarial assumptions; -OR- 2. Increase risk, potentially reduce financial burden on sponsor but expose plan & sponsor to drawdown; review flexibility of actuarial assumptions; -AND- 3. Open dialogue with plan sponsor. Solution may not be investment related.

Investment policy

In addition to helping with investment strategy development, results from the risk tolerance assessment also provide key insights into the development of an effective investment policy. Through the process, Board preference on topics such as leverage, illiquidity, complexity, active management, time horizon, and delegation of authority can be used to develop a clear investment philosophy, well-defined roles with appropriately defined decision-making authority, and guidelines for how to respond to challenging market conditions.

Conclusion

Plan fiduciaries face challenges on many fronts, including a rising yield gap and stagnating funded positions. In response, investment decision-makers may be tempted to increase risk in pursuit of higher investment returns. A more appropriate approach may be to conduct a thorough and realistic assessment of the plan’s risk tolerance, which incorporates both willingness and ability to incur risk and to then develop an investment strategy reflective of the pre-determined risk tolerance, while incorporating the practical realities of any constraints due to the financial condition of the plan sponsor.

Notes & Disclosures

- 1 Source: Economic Research Division, Federal Reserve Bank of St. Louis
- 2 Source: Center for Retirement Research at Boston College
- 3 Source: Ibid
- 4 Timothy Geddes et. al., Asset Allocation and the Investment Return Assumption, July 2020, American Academy of Actuaries, Washington D.C.
- 5 Ibid., Plan CAFRs
- 6 Edward Hoffman, CFA, FRM, The Enterprise Risks Facing California's Pension System, May 2019, presented at State Association of California Retirement Systems 2019 Spring Conference

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