



State Public Pension Investments Shift Over Past 30 Years

Contents

1 Overview

Data sources 1

Important terms 2

2 The shift to equities and alternative investments

Increasing risk 3

Move to alternatives 6

Higher money management fees add to pension plan costs 7

State and local governments are monitoring and evaluating their investment performance and risk exposure 8

8 Conclusion

9 Glossary

10 Endnotes

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Overview

As of 2012, the most recent year for which comprehensive data are publicly available, state and local public workers had earned more than \$4 trillion in expected benefit payouts, and public pension plans had approximately \$3 trillion in assets to make those payouts—leaving a gap of more than \$1 trillion between the two.¹ Although governments and employees make contributions to public pensions, investment earnings on the plans' assets are expected to fund about 60 percent of promised pension benefits.² Recent investment performance for public pension funds has been strong: for example, large funds posted returns of over 12 percent in the fiscal year ending June 2013.³ Future investment returns, however, are inherently uncertain, and a significant funding gap remains. The way these investments are managed by policymakers and pension plan administrators has significant influence on both the cost and the health of our nation's public pension systems.

In a bid to boost investment returns, public pension plans in the past several decades have shifted funds away from fixed-income investments such as government and high-quality corporate bonds. During the 1980s and 1990s, plans significantly increased their reliance on stocks, also known as equities. And during the past decade, funds have increasingly turned to alternative investments such as private equity, hedge funds, real estate, and commodities to achieve their target investment returns.

It is understandable that public pension plans have implemented these changes in asset allocation in order to maximize long-term returns and diversify their investment portfolios. But these changes in investment practice have coincided with an increase in fees as well as uncertainty about future realized returns, both of which may have significant implications for public pension funds' costs and long-term sustainability. In short, increased investments in equities and alternatives could result in greater financial returns but also increased volatility and the possibility of losses on these assets. Even relatively small differences in returns resulting from investment performance or fees can have a major effect on the asset values of pension funds. A difference of just one percentage point in returns in a single year on \$3 trillion equates to \$30 billion.

These trends underscore the need for additional public information on plan performance, insight on best practices in fund governance, and attention to the effect of investment fees on plan health. With \$3 trillion in assets and the retirement security of 14.5 million state and local employees at stake, sound investment strategy is critical.⁴

Data sources

We used three data sources to investigate investment trends:

- The U.S. Federal Reserve Financial Accounts of the United States data, which include aggregate economic and investment data on public pensions from 1952 to 2012.
- A data set collected by *Pensions & Investments*, "Public 100," that includes more detailed, fund-level data, particularly on the use by public-sector pension plans of hedge funds, private equity, and other alternative investments. These data comprise 100 major state and local pension funds covering 90 percent of all U.S. public pension assets. Our analysis focused on the Public 100 data set from 2006 to 2012—the most recent period for which consistent asset allocation and fee data are available—to highlight investment trends in recent years.
- Data collected from state comprehensive annual financial reports, pension plan actuarial valuations, and other relevant documents published by individual public pension plans from 1992 to 2012, with a primary focus on changes to asset allocation and fees from 2006 to 2012. These data cover 70 state-level pension funds that invest for 193 pension plans across all 50 states.

Together, these three data sets provide a 60-year picture of aggregate investment trends and a more detailed look at investment practices from 2006 to 2012 across the vast majority of major state and local public pension funds.

Important terms

There are three main types of investments that will be discussed throughout this paper.

- **Fixed-income investments** are any investments in which returns are predictable and paid at designated times. These can include domestic or international bonds issued by governments or corporations. Because fixed-income investments guarantee a specified return, these are generally considered lower-risk investments.
- **Equities** are stocks held by investors that represent ownership in a piece of a company. They can be domestic or international. Equities do not guarantee a specific rate of return and thus are generally riskier than fixed-income investments. But equities also have the potential for higher returns, and shareholders' investments may grow rapidly with the market.
- **Alternative investments** are any investments other than the traditional asset classes (fixed-income, cash, and equities). Alternative investments can be real estate, private equity, commodities, or hedge funds. Alternative investments often have the highest risk, but with the possibility of the highest rate of return.

See the glossary at the end of the report for a more complete list of definitions.

The shift to equities and alternative investments

Historically, public pension funds invested the majority of their assets in fixed-income investments such as government and corporate bonds. Government bonds and highly rated corporate bonds are considered safer investments because their realized rate of return is not likely to be too far above or below expectations. The return on publicly traded stocks and other equity investments is less certain, and their value can fluctuate more significantly with changes in the economy.⁵

Before the early 1980s, many public retirement plans were bound by strict regulations limiting their investment options. States, for example, were previously limited in their investment options by restrictive "legal lists" that were also used to regulate insurance and savings banks, for which safety was the principal concern. But these restrictions were gradually relaxed in states in the 1980s and 1990s, allowing pension plans much more latitude to invest in a broad variety of financial instruments, including stocks.⁶

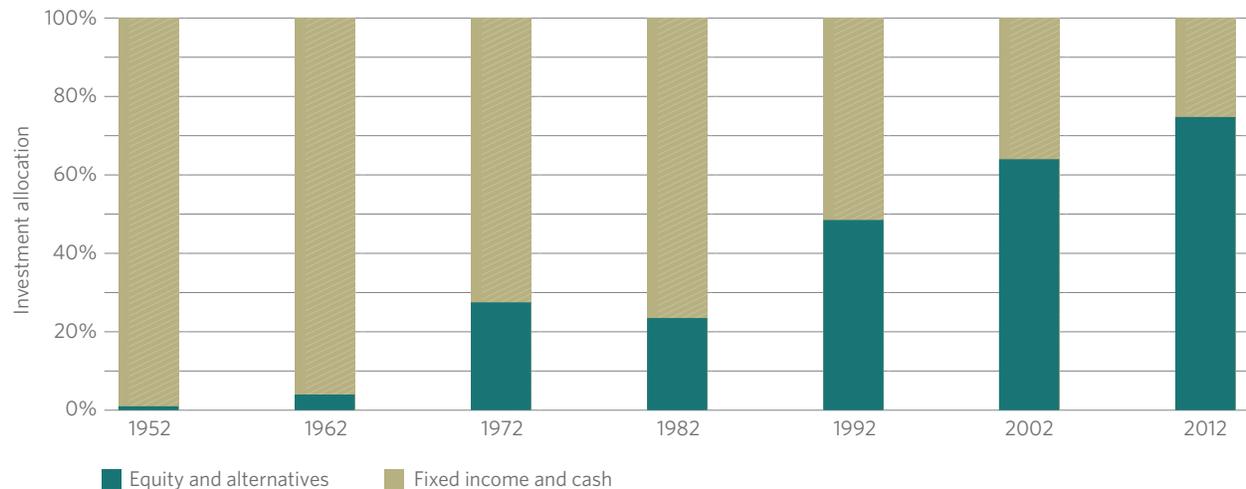
From the early 1980s onward, pension plans began shifting large portions of their portfolios away from fixed-income securities and toward equities. The change in allocation occurred slowly at first but picked up speed through the 1990s.⁷ Data from the Federal Reserve's Financial Accounts of the United States reveal that in 1952, nearly 96 percent of public pension assets were invested in fixed-income asset classes and cash.⁸ By 1992, the proportion of pension assets in fixed-income investments and cash had decreased to 47 percent, and by 2012, it had fallen to 27 percent.⁹ Cash and other cash equivalents, such as certificates of deposit, account for 2 to 3 percent of pension fund assets on average and are added to fixed income investments as part of what the Federal Reserve defines as "safe assets."

As the share of fixed income investments in pension plan portfolios declined, it was replaced by increasing equities and alternative investments. (See Figure 1.)

Figure 1

Public Pension Investments, 1952-2012

Allocations to equities and alternative investments have increased, while those to fixed-income investments have declined



Source: U.S. Board of Governors of the Federal Reserve System, *Financial Accounts of the United States, 1952 to 2012*; Pew Analysis of State Financial Reports

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Increasing risk

Investors expect a higher rate of return on risky assets such as stocks versus safer assets such as government bonds because the price of stocks reflects a “risk premium” that is, on average and over time, expected to reward investors for their willingness to accept a higher degree of uncertainty. The risk premium is the amount the return on a risky asset is expected to exceed the risk-free rate. It can be thought of as compensation for the investor taking on risk.

Public pension plans’ shift away from bonds to equities and alternative investments has been met with strong investment returns, especially through the bull market of the 1990s.¹⁰ Public pensions rode the big increase in the stock market between 1982 and 2000, resulting in a more than doubling of assets per worker.¹¹ But realizing the risk premium on any set of investments or over any particular time period is far from certain. In addition, greater potential investment gains on more risky assets are accompanied by greater potential investment shortfalls.

Public pension funds experienced large market losses during the market downturns of 2000-2002 and 2008. These losses had a significant impact on the fiscal health of public pension systems and were a major contributor—along with shortfalls in the funding of required contributions and changes to actuarial assumptions—to the sharp decline in the funded status of public pension plans. State pension plans’ funding levels declined from more than 100 percent in 2000, to 85 percent in 2006—well before the onset of the Great Recession—and 72 percent as of 2012.¹²

Strong market returns before the turn of the century buoyed pension plans’ expectations about the future, but these failed to materialize in the next decade. For example, the S&P 500, a leading benchmark for U.S. stocks, provided an annualized return of approximately 18 percent from 1990 to 1999 but between 3 and 4 percent

during the volatile period from 2000 to 2013. The expectation of higher returns has also allowed pension funds to keep their investment return assumptions relatively constant even as the expected returns on less risky bond investments declined.

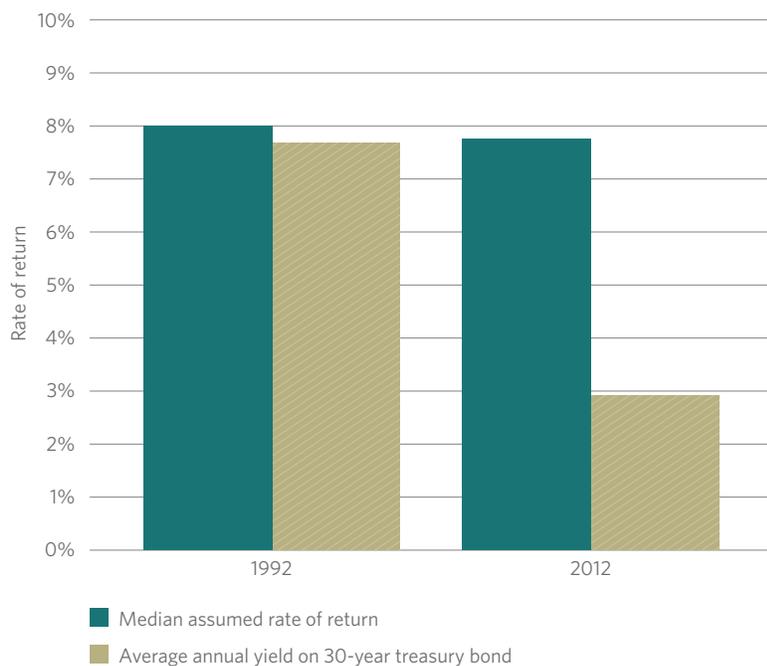
Public pension plans are relying more heavily on risky assets to deliver higher long-term returns in order to keep funding costs low, just as they are simultaneously betting on a much larger risk premium than in the past. Maintaining high expected rates of return reduces the size of annual payments into the plan from governments' budgets but also increases the risk of missing the assumed rate of return. And when investment returns fall short of the plan's target, then the state or local government sponsors of public pensions must increase annual budgetary payments to make up for the shortfall. Unfortunately, these increases typically coincide with broader economic problems, meaning that governments are called to put more into the system when they can least afford to do so.

The difference over the past 20 years between pension funds' assumed rates of return (their expectation for long-term investment returns) and the expected return on U.S. Treasury securities (the benchmark for risk-free investments) provides a useful framework to analyze the trend toward a reliance on a growing risk premium. Pension plans' assumed investment rate of return has remained relatively constant over the past two decades despite large reductions in the expected return on long-term bonds. From 1992 to 2012, the median pension fund's assumed rate of return changed only modestly, decreasing by 0.25 percentage points, from 8 percent to 7.75 percent.¹³ In contrast, the yield on risk-free, 30-year Treasury bonds declined by 4.75 percentage points during this period, from 7.67 percent to 2.92 percent. (See Figure 2.)

Figure 2

Public Pension Plan Median Assumed Rate of Return Versus U.S. Treasury Bond Yields in 1992 and 2012

Plans' anticipated risk premium has grown by 4.5 percentage points



Between 1992 and 2012, the difference between the median pension fund's assumed rate of return and the yield on risk free 30-year Treasury bonds has increased from .33 percentage points to 4.83 percentage points.

Source: U.S. Treasury and Analysis by the Pew Charitable Trusts of Comprehensive Annual Financial Reports, actuarial valuations and related reports from states

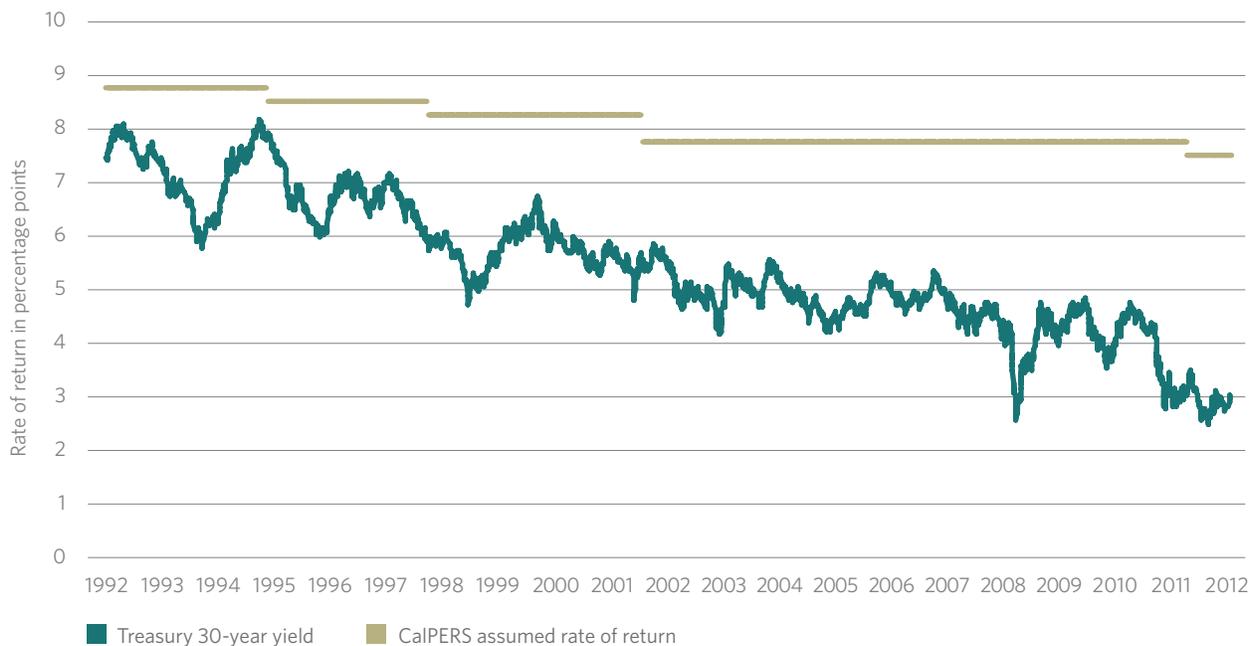
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The median public pension plan now assumes that its long-term investment performance will exceed the 30-year Treasury rate by 4.83 percentage points, compared with the expectation 20 years ago that it would beat the Treasury rate by only 0.33 percentage points.¹⁴

The California Public Employees' Retirement System, or CalPERS, the largest state or local pension plan in the United States, provides a useful example. In 1992, when 30-year Treasury rates were approximately 7.67 percent, CalPERS used an investment rate of return assumption of 8.75 percent. In order to meet that target, CalPERS' investments would need to beat Treasury rates by only 1.33 percentage points. By 2012, however, Treasury rates had fallen to 2.92 percent, while CalPERS had lowered its return assumption to 7.5 percent. CalPERS' investments would have to beat the Treasury rates by 4.58 percent. (See Figure 3.)

Figure 3 CalPERS' Increasing Risk Premium

Plan's assumed rate of return has remained relatively stable, while bond yields have declined



Source: Analysis by The Pew Charitable Trusts of U.S Treasury data and CalPERS' Comprehensive Annual Financial Reports

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Although public pension plans have generally exceeded their investment targets over the past 30 years, there is disagreement among experts in the field about the appropriateness of plans' current assumed rates of return. What is clear is that plans are now counting on a much larger risk premium than ever before.

These observations about risk mean that there is both an upside and a downside to investing in stocks and other asset classes. Historic long-term returns have paid off well for pension plans, and the recent rebound in the stock market has resulted in significant improvements in plans' fiscal health. In the fiscal year ending June 30, 2013, for example, the median return for public pension funds was more than 12 percent, well above the median assumed

rate of return of 7.75 percent.¹⁵ But it is important for government sponsors and public workers—those who manage public pension plans and those who depend on them—to be aware that plans are taking larger risks with public retirement assets today than they did in the past.

The Organisation for Economic Co-operation and Development, or OECD, and the International Organisation of Pension Supervisors, or IOPS, have adopted sound practices for pension funds' use of alternative investments. According to OECD and IOPS, "such investments may be complex, illiquid or opaque, and therefore require careful scrutiny and analysis, and in many cases, more rigorous review and monitoring than most traditional products." Plans can also be directly and adversely affected by the actions of other investors in these investments.

In their report *Good Practices on Pension Funds' Use of Alternatives and Derivatives*, OECD and IOPS recognize that alternatives may be used by pension funds for several appropriate reasons, including reduction in total portfolio risk through hedging and changing portfolio characteristics such as duration. There is also some evidence that, at least in theory, some level of investment in alternatives can be used to improve pension fund investment performance.¹⁶

Move to alternatives

Although there is no fixed definition for alternative investments, it is generally agreed to cover a wide range of vehicles, including private equity funds, hedge funds, distressed debt, and real estate investments. Managing these types of investments requires sophisticated investment expertise that may differ from what is required for managing stocks and bonds. By their very nature, alternative investments are less transparent than publicly traded securities. Private equity investments, for example, are not traded on a public stock exchange, making them difficult to value. And hedge funds typically keep confidential certain aspects of their fee structure and investment strategy.

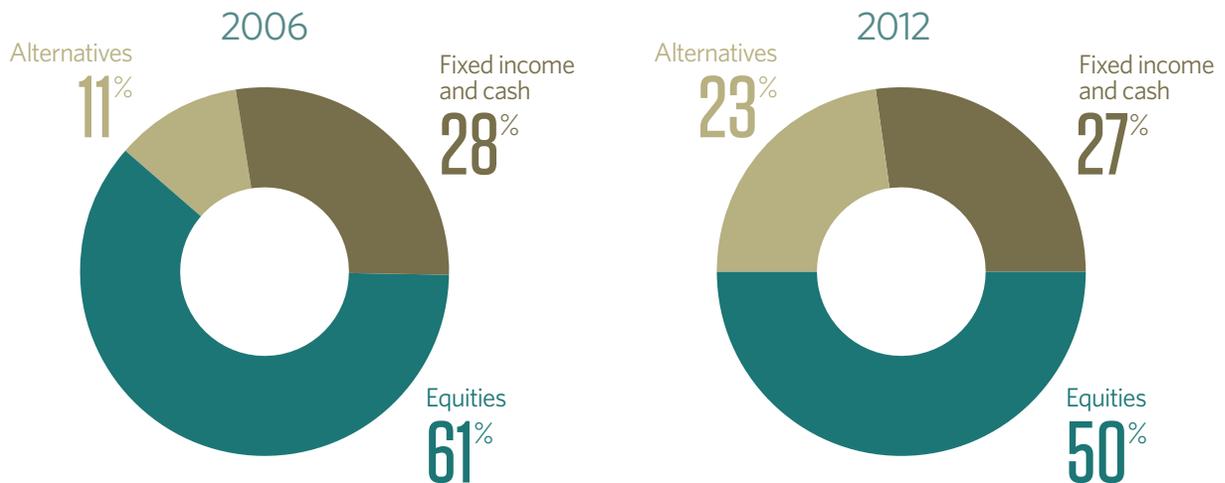
By 2012, the last year for which complete data are available, public plans' total allocation to fixed-income assets and cash was 27 percent, and the use of alternative investments had more than doubled since 2006. Detailed investment data from state financial reports and the Public 100 database illustrate how plans have altered their asset allocations. In 2006, 61 percent of pension assets were invested in equities, and 11 percent were in alternative investments. By 2012, the use of alternative investments had increased to 23 percent of plan portfolios. The majority of this growth came from greater investments in private equities and hedge funds, and the balance of the growth was in real estate and commodities. (See Figure 4.)

It is important to note that not all public pension plans have followed the same course. Data on investment practices were collected from 70 funds across all 50 states as part of our most recent state analysis, "The Fiscal Health of State Pension Plans." These data reveal a wide diversity in investment allocation to alternatives. Of the 70 funds in this data set, 67 had at least some alternative investments, but three were not invested in alternatives at all. Meanwhile, 13 of the 67 funds that invest in alternatives had at least one-third of their portfolio in this asset class.¹⁷

Figure 4

Public Pensions Include More Alternative Investments

Share of pension assets in alternatives had more than doubled



Source: Analysis by The Pew Charitable Trusts of State Comprehensive Annual Financial Reports, Public 100, and the Federal Reserve Financial Accounts of the United States

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Just as there is diversity in public pension plans' allocation to alternatives, the plans vary in their investment choices within that asset class. For instance, we found that the Oregon Public Employees Retirement System and the Washington Public Employees' Retirement System had the highest reported private equity allocation. Both reported more than 20 percent of their assets in such investments, but neither reported any significant investments in hedge funds.¹⁸ Meanwhile, the Missouri Public School and Education Employee Retirement System and the New Mexico Educational Retirement Board had at least 10 percent of their assets in hedge funds while their private equity investments were about half that size.¹⁹

Higher money management fees add to pension plan costs

The shift to more complex alternative investments, particularly hedge funds and private equity, has coincided with a significant increase in investment fees. According to the Public 100 data set, investment fee rates increased for over 70 percent of the 65 funds with fee data from 2006 to 2012—the same period during which pension plans more than doubled their allocations to alternative investments.

According to published financial reports, state plans reported approximately 30 percent more in investment fees in 2012 than in 2006.²⁰ State pension funds reported fees approximately equal to 0.37 percent of assets in 2012, up from an estimated 0.28 percent in 2006. Although the increase may seem small, this difference equates to over \$2 billion in investment fees annually given the size of the plans in question. In addition, some investment management fees are not explicitly identified in public financial reports for some plans, meaning that total fees may be greater than what is reported, emphasizing the need for more consistent disclosure.

State pension plans also vary substantially in how fees have changed over the five-year period. CalPERS, for example, substantially reduced its investment-related costs by reducing external management fees and bringing some investment functions in-house.²¹ Conversely, investment fees in Missouri increased by more than half a percentage point of assets as the state substantially increased its use of hedge funds, as part of a risk-managed strategy that is designed to achieve investment return targets while reducing volatility.²² While it is difficult to predict how these different strategies and fee levels may affect investment performance over time, government sponsors and other stakeholders would benefit from consistent information on asset allocation, performance, and fees, as well as information on practices and strategies that are being implemented in other states.

State and local governments are monitoring and evaluating their investment performance and risk exposure

Many plan sponsors—including CalPERS, as noted above—are exploring changes in practice such as moving more investment management in-house and/or implementing more passive management strategies that could significantly decrease fees. The Wisconsin Public Employees Retirement System, the ninth-largest system in the United States, is emblematic of this trend. The State of Wisconsin Investment Board, which oversees investments for the plan, has been managing an increasing portion of its own investments over the past decade. In 2007, the state managed 21 percent of its pension investments directly; today it manages 57 percent.²³

Or consider the Massachusetts Pension Reserves Investment Management Board, which manages investments for the Massachusetts State Employees' and Teachers' Retirement Systems and has significantly reduced fees by modifying management of its hedge fund program. The pension plan has had a private equity portfolio since 1983, and the state in 2006 began investing in hedge funds through a fund-of-funds program.²⁴ This model was recently replaced by a more direct investment model, a move that generated estimated savings of \$29 million for 2013.²⁵

Conclusion

State and local public pension funds have significantly changed their asset-investment strategies over the past three decades. They have shifted a large percentage of fund assets away from fixed-income securities, such as government and corporate bonds, toward equities and alternative investments, including hedge funds and private equity funds. This shift has increased the riskiness and complexity of pension portfolios and has coincided with significantly higher investment fees.

These new trends require greater vigilance on the part of government officials and board members to help safeguard the plans' long-term sustainability. Effectively managing risk and volatility is critical when funds are heavily invested in equities and alternatives. In addition, evaluating costs is vital when pension funds are invested in complex investment products that can charge high fees.

The findings presented in this brief point to the need for additional public information on plan performance, insight on best practices in fund governance, and attention to the effect of investment fees on plan health. Elected officials at the state and local levels can work with pension plan administrators to ensure that investment decisions are based on a thorough understanding of risk and cost. Government sponsors can demand better reporting of future expected costs and the associated downside risks, and then use this information to make decisions about ways to deal with poor outcomes, should they occur.

Glossary

Alternative investments: Alternatives are any investments other than the traditional types (fixed-income, cash, and equities). Alternative investments can be in real estate, private equity, commodities, or hedge funds. These are complex investments, subject to different durations and risk exposure. Individual investors do not typically have access to alternative investment types, but large investors such as pension funds do.

Assumed rate of return: The assumed rate of return is the investment return target and the result that a pension plan estimates its investment allocation mix will deliver.

Bonds: A bond is an instrument of indebtedness of the bond issuer to the holders. It is a debt security, under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and/or to repay the principal at a later date, termed the maturity date.

Cash equivalents and short-term investments: Cash equivalents and short-term investments are financial investments of relatively short duration that generally present low risk and lower returns but are more liquid than other investments. For pension plans, these can be notes or certificates of deposit.

Commodities: Physical commodities are assets such as agricultural products or natural resources such as timber.

Fixed income: Fixed-income investments are investments in which returns are predictable and paid at designated times. These can include domestic bonds or international bonds. Because fixed-income investments guarantee a specified return, these are generally considered low-risk investments.

Equities: Equities are stocks held by investors that represent ownership in a piece of a company. They can be domestic or international. Equities do not guarantee a specific rate of return and thus are generally riskier than fixed-income investments. But equities also have the potential for higher returns, so shareholders' investments may grow rapidly with the market.

Private equity: Private equity is an asset class consisting of equity securities and debt in operating companies that are not publicly traded on a stock exchange.

Hedge fund: A hedge fund is a private investment fund or pool that trades and invests in various assets such as securities, commodities, currency, and debt, equity, and commodity derivatives on behalf of its clients, typically institutional investors and wealthy individuals.

Investment fees: Investment fees are any fees that a pension plan pays to professionals to allocate its assets. These can be administrative or money management fees. Generally, more traditional investment types have lower investment fees than more complex investments.

Risk premium: The risk premium is the amount the return on a risky asset is expected to exceed the risk-free rate, and can be thought of as compensation for the investor taking on risk.

Yield: Yield is the return on an investment. In securities, it is the dividends or interest received, usually expressed as an annual percentage of either the current market value or the cost of the investment.

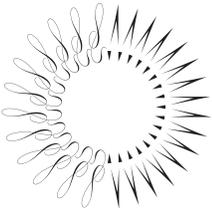
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