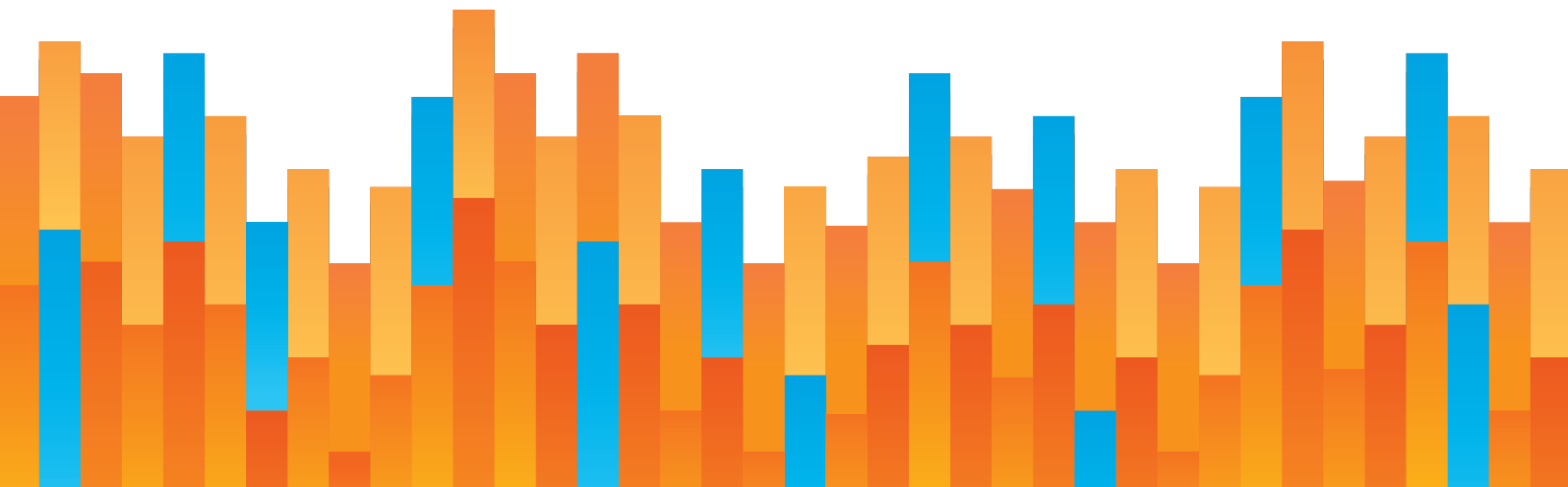




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THE “NEW NORMAL” IN PUBLIC PENSION INVESTMENT RETURNS

by Anil Niraula and Truong Bui
April 2020





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EXECUTIVE SUMMARY

Despite a decade-long bull market—and even before the arrival of the pandemic-related market turmoil of March 2020—many “defined benefit” (DB) pension plans covering U.S. state and local government employees have continued grappling with growing unfunded liabilities. And the primary culprit of growing pension debt, according to analyses by the Pension Integrity Project at Reason Foundation, has been the across-the-board investment underperformance of pension assets relative to plans’ own return targets.

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This unwelcome emergence of the “new normal” lower-yield investment environment is characterized by low dividend yields, ultra-low interest rates, subdued economic growth, subpar inflation, and increased market volatility/risk. Furthermore, most financial advisors now portend muted (compared to the past 30 years) investment returns for institutional investors over the next 10–15 years.

But, despite the mounting evidence and informed projections of the “new normal” lower-yield environment, many public pension plans postpone adjusting their investment risk policies and long-term rate of return (and discount rate) targets to the new realities.

The implications of inaction could be severe. If, for example, pension trustees are wrong on the expected investment returns (and on the discount rate), then they will continue gradually adding more unfunded pension liabilities (i.e. pension debt) and weaken their cash flow, which is crucial for managing annual benefit payouts. Furthermore, leading economists agree that when state and local governments discount their pension liabilities at high rates, they understate the contributions needed to pre-fund promised pension benefits. And putting off pension payments further degrades cash flow and leads to long-term fiscal disaster.



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Each state and local government pension plan is unique with its own set of problems, and budget trade-offs are a large part of the public finance equation. And yet, faced with such headwinds, policymakers and pension trustees must acknowledge the evidence supporting the changing investment reality and the “new normal” for pension plans. Doing so sooner rather than later, by taking proactive steps, will position these state and local public pension systems to better secure promised pensions, and weather any economic, capital market, or other fiscal storms along the way.

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PART 1

INTRODUCTION

Over 16 million state and local government employees across the U.S. participate in “defined benefit” (DB) pension plans that rely primarily on regular contributions (both from employers and employees) and asset returns in order to pre-fund promised pension benefits for teachers, law enforcement officers, judges, and other public service workers. As much as 63% of overall pension revenue between 1989 and 2018 came from investments alone, according to the National Association of State Retirement Administrators (NASRA).¹

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It is, however, now clear that over the past decade the capital markets have drastically changed; sustainable double-digit yields are long gone.

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It is, however, now clear that over the past decade the capital markets have drastically changed; sustainable double-digit yields are long gone. Public pensions lost a significant portion of their assets in the aftermath of the dot-com crash in the early 2000s (when most public pensions were 100% funded), and then again during the 2007–08 financial crisis.

¹ “NASRA Issue Brief: Public Pension Plan Investment Return Assumptions.” National Association of State Retirement Administrators, February 2020.
<https://www.nasra.org/files/Issue%20Briefs/NASRAInvReturnAssumptBrief.pdf> (accessed February 2020)

This chain of asset losses, followed by muted returns, plunged many jurisdictions into a spiral of unfunded pension liability accruals and debt payments. With pension liabilities growing faster than assets, costs of underfunding are claiming a disproportionate amount of tax revenues, escalating funding concerns for elected leaders. According to an analysis by Fitch Ratings, from 2001 to 2017 public pension liabilities and assets grew at compound annual rates of 5.2% and 3.4%, respectively.²

At press time, it is premature to offer more than informed speculation on the potential impacts of the recent market turmoil—with the S&P 500 Index dropping by 30% by mid-March of 2020 below its records just a month ago—brought about by the global response to the COVID-19 pandemic. However, it is safe to say that because most U.S. public pension funds had still not yet fully recovered from the Great Recession by 2020—despite a decade-long bull market—they will hardly withstand another such crisis without suffering a major blow to their asset levels and long-term solvency prospects.³

Similarly, most leading financial advisors project subdued capital market returns in the next 10 to 15 years. As The Group of Thirty Steering Committee and Working Group on Pensions recently pointed out: “[t]he ongoing fluctuations in asset prices and the likely ‘new normal’ future of low real asset returns for a protracted period of time create major uncertainties for individuals, policy makers, and pension fund professionals.”⁴ But despite the mounting evidence of changed capital market realities and a likely need to curb investment expectations amid this “new normal” in the global capital markets, many U.S. public pension administrators (or in some cases, policymakers) continue to maintain assumed investment returns in the 7%–8% range.⁵

² “U.S. State and Local Pension Investments: Concerns Grow with Riskier Allocations.” Fitch Ratings, Special Report, May 6, 2019. <https://www.nasra.org//Files/Topical%20Reports/Credit%20Effects/Fitch%201905%20allocations.pdf> (accessed January 2020).

³ McCabe, Caitlin, Anna Hirtenstein and Chong Koh Ping. “Dow Plummets Nearly 3,000 Points as Virus Fears Spread.” *The Wall Street Journal*, March 16, 2020. www.wsj.com/articles/stocks-dow-slide-after-fed-slashes-rates-11584310328?tesla=y

⁴ “FIXING THE PENSIONS CRISIS: *Ensuring Lifetime Financial Security*.” Group of Thirty, November 1, 2019. https://group30.org/images/uploads/publications/G30_Pensions.pdf (accessed January 2020).

⁵ Niraula, Anil. “Major Advisors Lower Their Long-Term Investment Return Outlooks, Curbing Public Pension Plans’ Enthusiasm.” Reason Foundation. January 29, 2018. <https://reason.org/commentary/major-advisors-lower-their-long-term-investment-return-outlooks-curbing-public-pension-plans-enthusiasm/>

Defenders of maintaining unrealistic asset return assumptions tend to make a few common arguments:

- Public plans' average returns over the last three decades have actually exceeded the assumed returns.
- Public plan return assumptions take the long-term view, so short-term volatility should be of no serious concern.
- Investment risk decreases over time, so the long-term view justifies the high assumed returns.

In the following sections we will explore these and other arguments in the context of the "new normal" lower-yield environment and its implications for the future of public pension finance and unfunded pension liabilities across U.S. jurisdictions.

PART 2

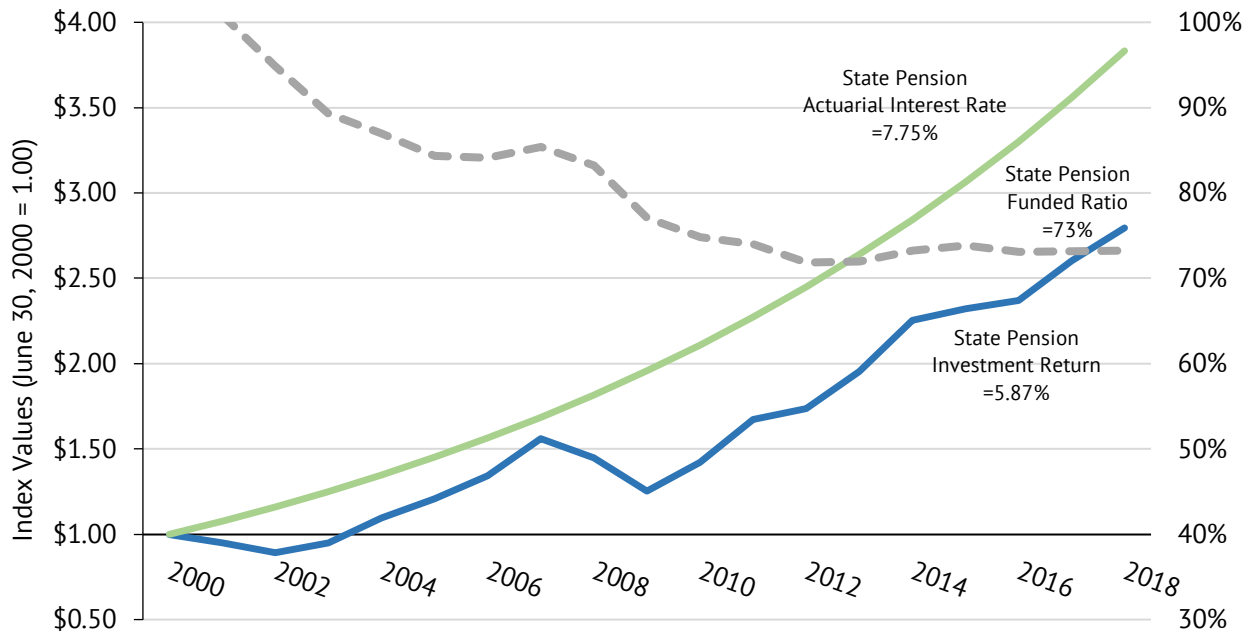
THE CHANGING PENSION LANDSCAPE: THE "NEW NORMAL," LOW-YIELD ENVIRONMENT

At the dawn of the 21st century, most American public pension systems were roughly 100% funded. However, the growing gap between actual and assumed investment returns throughout the 2001–17 period changed everything. According to the Center for Retirement Research at Boston College, investment underfunding accounted for roughly one-third of the difference between the top and bottom pension plan groups in terms of funded status.⁶

Indeed, per Cliffwater LLC, state pensions collectively returned an asset-weighted (compound) annual return of just 5.87% over the 2000 to 2018 period, badly trailing their own asset-weighted 7.75% return assumption. (See Figure 1).

⁶ Aubry, Jean-Pierre, Caroline V. Crawford, and Kevin Wandrei. "Stability in Overall Pension Plan Funding Masks a Growing Divide." Center for Retirement Research at Boston College (CRR) and Center for State and Local Government Excellence, October 2018. www.slge.org/assets/uploads/2018/10/2018-10-fundingbrief.pdf (accessed February 2020).

FIGURE 1: PENSION PERFORMANCE, ACTUARIAL RATES, AND FUNDING RATIOS, 2000–2018



Source: *An Examination of State Pension Performance 2000–2018*. Cliffwater LLC., October 2019. <https://www.cliffwater.com/ResearchPage#>

While many public pension plans have reduced their return assumptions over the last decade, the pace has been slow. According to NASRA, the median expected return in 2019 was 7.25% across the largest public pension plans.⁷



What should be particularly concerning to policymakers is that long streaks of investment losses can deplete pension assets so much that it becomes virtually impossible to recoup the lost yields due to compounding effects.



⁷ “NASRA Issue Brief: Public Pension Plan Investment Return Assumptions.” National Association of State Retirement Administrators, February 2020, <https://www.nasra.org/files/Issue%20Briefs/NASRAInvReturnAssumptBrief.pdf> (accessed February 2020).

What should be particularly concerning to policymakers is that long streaks of investment losses can deplete pension assets so much that it becomes virtually impossible to recoup the lost yields due to compounding effects.⁸ That is, even healthy investment returns can fail to generate meaningful material gains when assets are severely depleted.

For example, some of the state pension systems—including Kentucky, Connecticut, Illinois, and New Jersey—were so underfunded in the aftermath of the 2007–08 financial crisis that even the current, longest economic recovery in history did not appear to help them dig out of the deep underfunding trenches.⁹ Under such cash-strapped conditions, an already underfunded pension fund’s long-term solvency becomes extremely vulnerable to future investment losses.

TEXT BOX 1: How Defined Benefit Pension Plans Are Funded

Defined benefit (DB) plans provide, specified far in advance, retirement benefits that are guaranteed by their employer for life. The monthly retirement benefit is typically based on the employee’s final average salary, years of work, age, and benefit multiplier. They are designed to be pre-funded such that when an employee retires, the employer has reserved—through contributions and investment returns—enough money to pay for all promised retirement benefits (i.e. pension checks).

As DB benefits are promised by the government ahead of time, in exchange for employee contributions and lower pay, they are morphed into actuarial accrued liabilities for states and localities. Each year actuaries calculate what employer and employee rates (as share of payroll) need to be paid to pre-fund DB benefits (i.e. normal cost) and pay off unfunded liabilities (amortization payments). These calculations are based on another source of revenue—assumed investment returns. In case actual returns underperform, or other actuarial experiences deviate from assumptions leading to pension debt increases, actuaries recalculate contribution rates upward to compensate for the shortfall.

⁸ Bui, Truong and Anthony Randazzo. “Why Discount Rates Should Reflect Liabilities: Best Practices for Setting Public Sector Pension Fund Discount Rates.” Reason Foundation, September 2015, https://reason.org/wp-content/uploads/files/pension_discount_rates_best_practices.pdf

⁹ “The State Pension Funding Gap: 2017.” The Pew Charitable Trusts, June 27, 2019. <https://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2019/06/the-state-pension-funding-gap-2017> (accessed February 2020).

Furthermore, there is a growing consensus that return expectations will be dampened, compared to historical averages, at least in the near-term return horizon. Among the major deterrents of future yields are high valuations of both equities and fixed incomes, two primary asset classes public pension plans invest in. Thus, today's high market valuations may portend stagnation in future yields.

Only in recent years have perceptions started to change, with chief investment officers of some of the largest U.S. pension funds explicitly acknowledging that they have little hope of earning their assumed rates of return in the near-term.¹⁰ "The next two years, the next five years, and perhaps the next 10 years are shaping up to be the most challenging market environment for us, for institutional investors and for pension funds going forward," former CalPERS Chief Investment Officer Ted Eliopoulos told *Bloomberg* in July 2016.¹¹ More recently, Dominic Garcia, chief investment officer of New Mexico's Public Employees Retirement Association plan, told a state pension solvency task force in 2019 that the plan's current 7.25% return assumption is a "rosy scenario," adding that, "[w]e need this system to be resilient to bad outcomes."¹²

And as much as 90% of state and local pension plans have reduced their return assumptions since 2010, according to NASRA's 2019 report. Often, however, these adjustments are minor and mainly feature inflation, rather than the real return (two components of rate of return assumption), rate changes. This matters, as inflation projection is an external parameter, and the real rate of return assumptions are what ultimately drive the plans' investment strategy and the overall long-term return expectations.

¹⁰ Jacobius, Arleen. "Pension fund CIOs see diminished hope in achieving assumed rate of return". *Pensions & Investments*. April 07, 2016. <https://www.pionline.com/article/20160407/ONLINE/160409896/pension-fund-cios-see-diminished-hope-in-achieving-assumed-rate-of-return> (accessed January 2020).

¹¹ Nash, James. *Calpers Braces for Lower Returns in 'Most Challenging Market'*. Bloomberg, August 15, 2016. <https://www.bloomberg.com/news/articles/2016-08-15/calpers-braces-for-lower-returns-in-most-challenging-market> (accessed November 2019).

¹² McKay, Dan. "Experts suggest fixes for state pension plans." *Albuquerque Journal*, May 16, 2019. <https://www.abqjournal.com/1316863/experts-suggest-fixes-for-state-pension-plans.html>

PART 3

FACTORS DRIVING THE "NEW NORMAL" OF LOWER FUTURE LONG- TERM RETURNS

3.1

PAST 30-YEAR RETURNS HAVE EXCEEDED THE LONGER-RUN AVERAGE

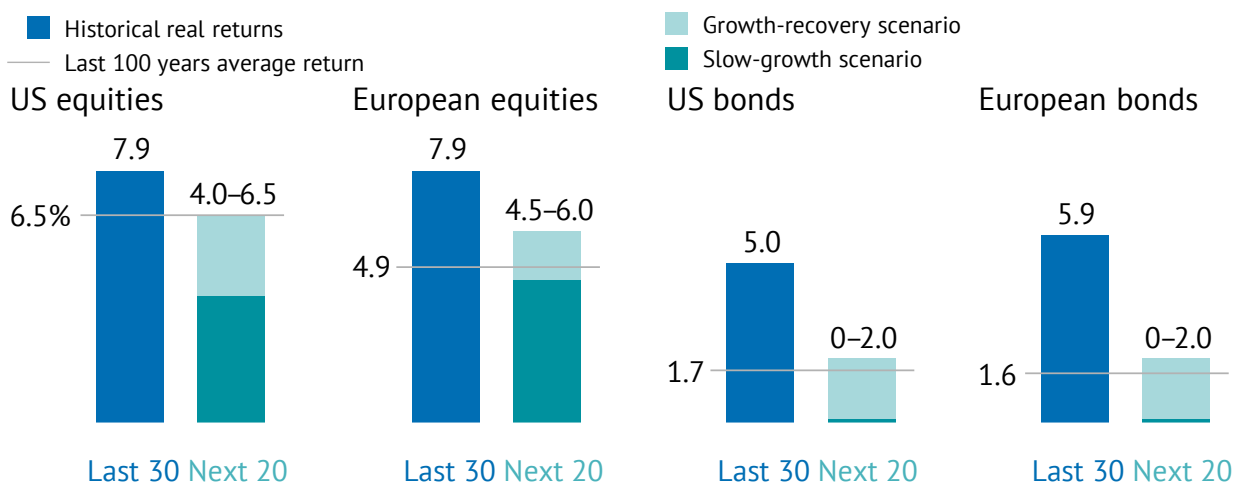
A 2016 report by McKinsey Global Institute finds that total returns to financial markets in the U.S. and Western Europe over the past 30 years significantly outperformed the long-term 100-year average.¹³ This exceptional performance could be explained by sharp declines in inflation and interest rates, as well as strong world Gross Domestic Product (GDP) growth fueled by favorable demographic and productivity gains. However, these factors are weakening (see text box 2), and future investment returns may revert back to much lower long-term averages.

¹³ Dobbs, Richard, Tim Koller, Susan Lund, Sree Ramaswamy, Jon Harris, Mekala Krishnan, and Duncan Kauffman. "Diminishing Returns: Why Investors May Need To Lower Their Expectations." McKinsey & Company, May 2016. <http://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/why-investors-may-need-to-lower-their-sights>

FIGURE 2: HISTORICAL AND ANTICIPATED RETURNS

The past 30 years saw returns that exceeded the long-run average

The next 20 years could be more challenging

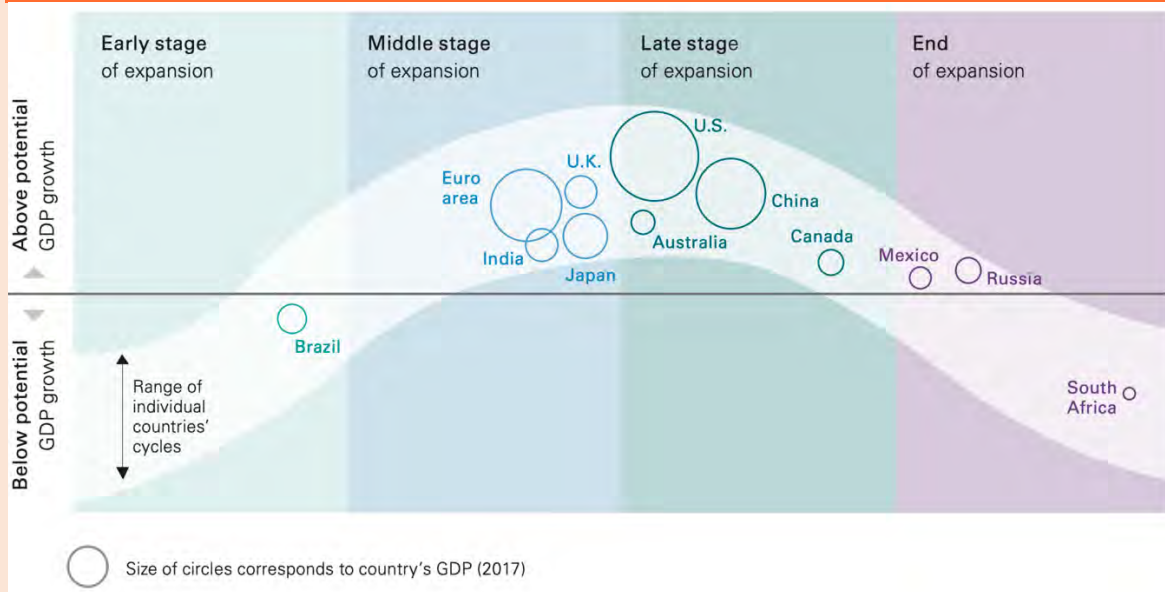


Source: Dobbs, Richard, Tim Koller, Susan Lund, Sree Ramaswamy, Jon Harris, Mekala Krishnan, and Duncan Kauffman. "Diminishing Returns: Why Investors May Need to Lower Their Expectations." McKinsey & Company. May 2016. <http://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/why-investors-may-need-to-lower-their-sights>

TEXT BOX 2: Slow Economic Expansion and Low Inflation Rates

In June 2019, the economic expansion reached its 10-year mark, marking the longest such streak in U.S. history. According to the Vanguard Group, in 2017 the U.S. was just entering the late stage of the economic cycle, where U.S. GDP is supposed to still grow at above its potential rate for some time (see Figure 3).

However, the U.S. has not had a single year of above-average real GDP growth (3.19%) since 2005, according to Bureau of Economic Analysis data. Meanwhile, the International Monetary Fund (IMF) is anticipating U.S. economic growth to wind down to a 1.6% real annual growth rate by 2024.

FIGURE 3: STAGES OF ECONOMIC CYCLE BY COUNTRY, 2017

Notes: The vertical axis represents GDP growth rate relative to each country's potential growth rate, represented by the horizontal line. There is no inherent time limit on the length of each stage; different economies progress through the stages at varying speeds. The end of an expansion represents below-trend growth, which may or may not match the common definition of recession of two consecutive quarters of negative real GDP growth. Source: "Vanguard Economic and Market Outlook for 2019: Down But not Out." Vanguard and International Monetary Fund, December 2019. <https://pressroom.vanguard.com/nonindexed/Research-Vanguard-Economic-and-Market-Outlook-2019-120618.pdf>

Contributing factors include the aging population and stagnating labor participation rates that are bringing down labor productivity, according to Group of Thirty. Another piece of this puzzle is tepid growth in consumer prices, which slows down nominal GDP growth. "Low inflation is indeed the problem of this era. The current outlook of moderate growth, low unemployment, but stubbornly low inflation is a reflection of the broader economic picture," noted John Williams, New York Federal Reserve president.

Sources:

Hilsenrath, Jon. "After Record-Long Expansion, Here's What Could Knock the Economy Off Course." *The Wall Street Journal*, June 3, 2019, <https://www.wsj.com/articles/after-record-long-expansion-heres-what-could-knock-the-economy-off-course-11559591043>; Tabarrok, Alex. "Average is Over: GDP Edition." *Marginal Revolution*, September 16, 2019, <https://marginalrevolution.com/marginalrevolution/2019/09/average-is-over-gdp-edition.html>; H. Plecher, "Real Gross Domestic Product (GDP) growth rate in the United States from 2014 to 2024." Statista, November 26, 2019. <https://www.statista.com/statistics/263614/gross-domestic-product-gdp-growth-rate-in-the-united-states/>; Timiraos, Nick. "Why the Fed Is Cutting Rates When the Economy Looks Good." *The Wall Street Journal*, July 29, 2019. <https://www.wsj.com/articles/why-the-fed-is-cutting-rates-when-the-economy-looks-good-11564392600>; Franck, Thomas. "NY Fed President John Williams says low inflation is 'the problem of this era.'" CNBC, September 4, 2019, <https://www.cnbc.com/2019/09/04/ny-feds-john-williams-says-low-inflation-is-the-problem-of-this-era.html>

3.2

FUNDAMENTAL GROWTH MODEL PREDICTS LOW EQUITY RETURNS

The Gordon Growth Model is one method to help determine the objective/intrinsic value of a company's stock by using stable dividend growth rate and expected rate of return:¹⁴

$$\text{Value of Stock} = \text{DPS1}/(\text{ke}-\text{g})$$

where,

DPS1 = Expected dividends one year from now (next period),

Ke = Required rate of return for equity investors, and

g = Stable growth rate in dividends

The stable growth rate in dividends, however, is often assumed to grow at the rate of a company's earnings, and has to be less than or equal to the growth rate of the economy (real growth plus inflation).¹⁵ Rewriting this formula allows us to estimate the required rate of return (i.e. long-term rate of return for equities) as the expected (or current, for simplicity) dividend yield plus the expected growth rate (in earnings or the economy):

Long-Term Equity Return = Current Dividend Yield + Growth Rate

Diving deeper, the current dividend yield in the U.S. is about 2% (S&P 500 average dividend yield).¹⁶ It's reasonable to assume that the growth rate in corporate earnings approximates the nominal GDP growth rate. According to the OECD Economic Outlook from 2014, the U.S. real GDP (less inflation) is forecasted to grow at an average rate of 2% from now to 2060, and the long-term forecast for inflation is around 2% as well, yielding a nominal growth rate of approximately 4%.¹⁷ This means that public pension plans should expect total long-term equity returns to only average out to around 6%.

¹⁴ Blackburn, James. *The Gordon Growth Model: Formula & Examples*. <https://study.com/academy/lesson/the-gordon-growth-model-formula-examples.html> (accessed December 2019).

¹⁵ Damodaran, Aswath. *Introduction to Valuation*. In *Handbook of Finance*, F.J. Fabozzi (Ed.). Chapter 13, September 15, 2008. <http://pages.stern.nyu.edu/~adamodar/pdfiles/valn2ed/ch13.pdf> (accessed January 2020)

¹⁶ *S&P 500 Dividend Yield*. YCharts Inc., https://ycharts.com/indicators/sp_500_dividend_yield (accessed March 2020)

¹⁷ "Economic Outlook No 95.–May 2014–Long-Term Baseline Projections." *Gross Domestic Product, Volume, Oecd.Stat*. https://Stats.Oecd.Org/Index.Asp?Datasetcode=Eo95_Ltb (Accessed January 2020)

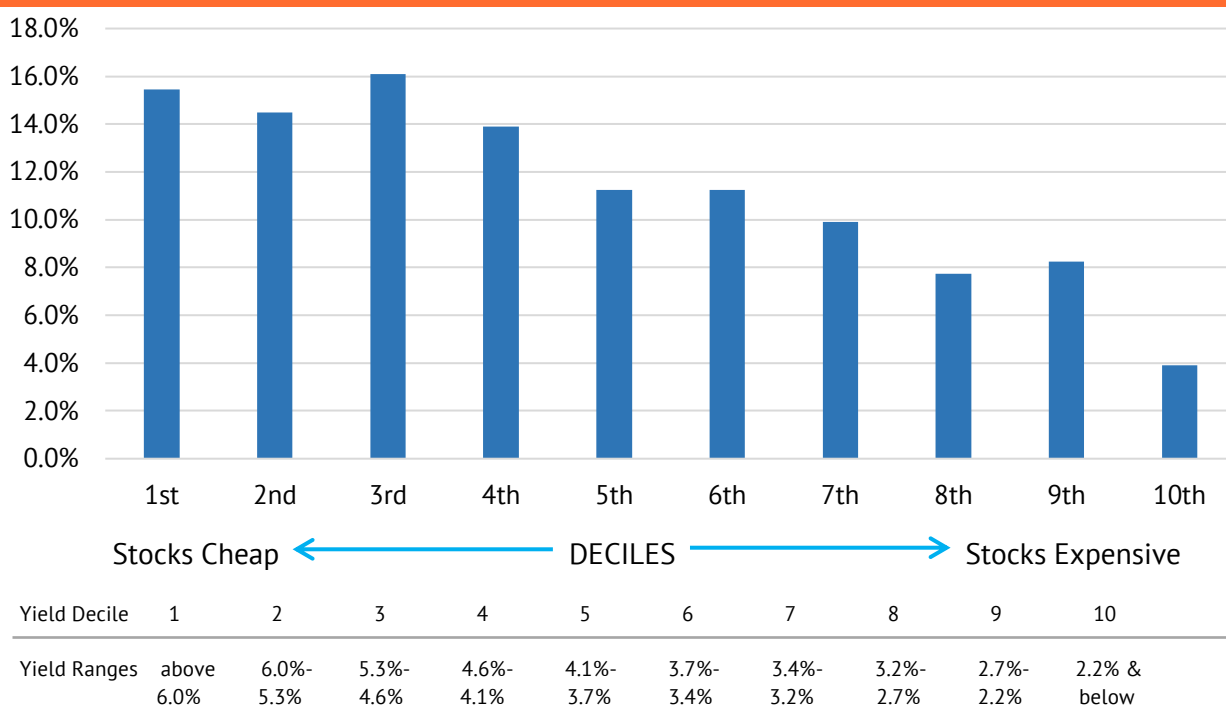
3.3

LOW DIVIDEND YIELDS AND HIGH PRICE-TO-EARNINGS (P/E) RATIO PREDICT LOW EQUITY RETURNS

As argued by prominent economists John Campbell and Robert Shiller, among others, the initial dividend yield predicts as much as 40% of the variability in future stock returns.¹⁸ Figure 4 shows the strong *positive relationship* between the initial dividend yield of the U.S. stock market and the subsequent median 10-year total return.¹⁹

As state and local pension plans mainly invest their assets in equities, lower equity return forecasts imply lower potential returns for pension portfolios at large.

FIGURE 4: MEDIAN TEN-YEAR TOTAL RETURNS FROM HISTORIC YIELD DECILES, 1926-2018



Source: Burton, G. Malkiel. "What long-term returns should I expect from US stocks?" Leuthold Weeden Capital Management. Wealthfront Software LLC., March 16, 2016. <https://blog.wealthfront.com/us-stock-long-term-returns/>

¹⁸ Campbell, John Y. and Robert J. Shiller. *The Review of Financial Studies*. Vol. 1, No. 3. 195–228. Oxford University Press. Sponsor: The Society for Financial Studies. Autumn, 1988. <https://www.jstor.org/stable/2961997>

¹⁹ Heaney, Richard and Vlad Pavlov. *The Relationship Between Dividend Yield and Equity Market Value*, Editorial Express, 2006. <https://pdfs.semanticscholar.org/a336/f264a8f46c6bb570b8c600ceb82c9b08aadd.pdf>

With dividend yields currently hovering around 2%²⁰—for example, historically high dividends in the booming communication services sector (e.g. Facebook and Alphabet) now offer just 1.5% average yields—future 10-year returns are likely to be lower than 6%.²¹ As a point of reference, back in 2016 public plans assumed normal stock returns of 9.6%.²²

Campbell and Shiller's research also shows that there is a strong *negative relationship* between the initial market price-to-earnings (or P/E) ratio and the subsequent 10-year returns. Given that today's market Shiller P/E ratio is around 29—much higher than the historical average of 17—future 10-year stock returns are likely to be heading downward from here on out.²³

According to *The Wall Street Journal*,²⁴ McKinsey & Company, and other sources, factors driving the growing P/E ratios include low interest rates incentivizing more borrowing and reinvesting, dampened corporate earnings due to the slow economic expansion, and high levels of stock buybacks (where companies buy their own stocks) over the past nine years that artificially reduced the quantity—thereby increasing prices—of traded stocks.²⁵ In short, a combination of overpriced stocks (high P/E ratio) and low dividend yields is portending diminished equity returns for public pension plans, as institutional investors, in the next decade.

²⁰ Wursthorn, Michael. "Falling Bond Yields Make Equities Hard to Ignore." *The Wall Street Journal*. August 13, 2019. <https://www.wsj.com/articles/falling-bond-yields-make-equities-hard-to-ignore-11565688603>

²¹ "2019 Outlook." Onward. Charles Schwab. Spring 2019. https://www.schwab.com/resource-center/insights/sites/g/files/eyrktu156/files/Q119_ON_whole_book_WEB_0227_REV.pdf (accessed December 2019)

²² H. Munnell, Alicia and Jean-Pierre Aubry. "The Funding of State and Local Pensions: 2015–2020." Center for Retirement Research at Boston College, June 2016. http://crr.bc.edu/wp-content/uploads/2016/06/slp_50.pdf

²³ "Shiller P/E – A Better Measurement of Market Valuation." GuruFocus. <https://www.gurufocus.com/shiller-PE.php> (accessed February 25, 2020)

²⁴ Ip, Greg. "Interest Rates Drive Stocks As Earnings Take Back Seat." New York University. http://pages.stern.nyu.edu/~adamodar/New_Home_Page/articles/peintrate.htm (accessed January 2020).

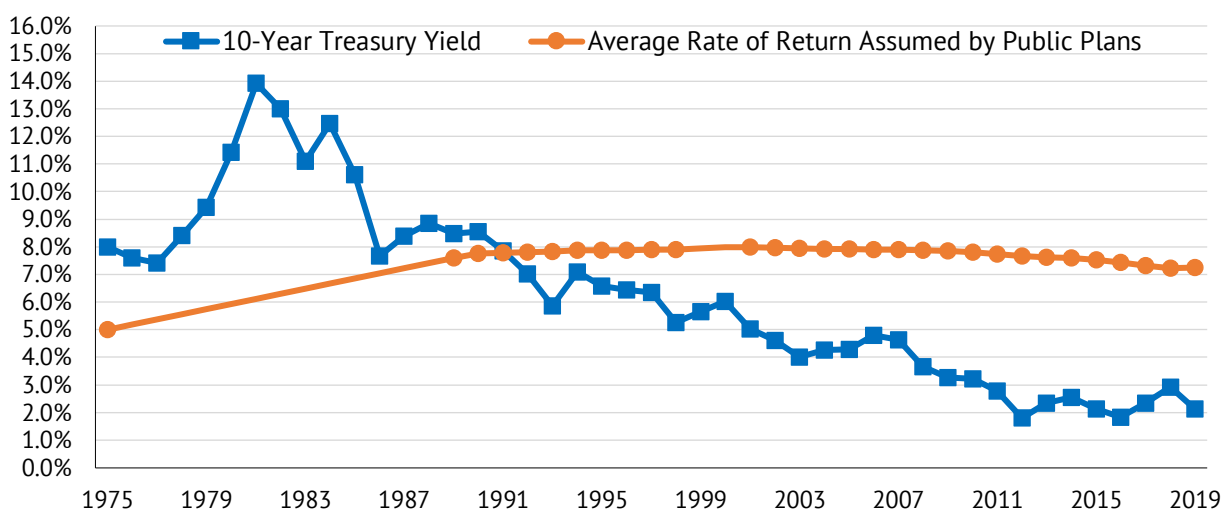
²⁵ Dobbs, Richard and Werner Rehm. "The value of share buybacks." McKinsey & Company, August 2005. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-value-of-share-buybacks>

3.4

DECLINE IN RISK-FREE RATE PREDICTS LOW FIXED INCOME RETURNS

As time goes on, it becomes ever more apparent that the capital markets in the 2020s and beyond are not the same as that of 1980s–2000s. One only needs to examine the massive decline in risk-free interest rates—usually represented by long-term Treasury yields (see Figure 5)—which have fallen sevenfold since the early 1980s and by more than 50% just since 2000. As interest rates fell precipitously over the last three decades, public plan return assumptions have changed little. During the post-crisis era, yields on 10-year Treasuries have averaged out to just under 2.5%, roughly half the level in the decade prior to the 2007–08 financial crisis.²⁶

FIGURE 5: RISK-FREE RETURNS VERSUS AVERAGE RETURNS ASSUMED BY PUBLIC PENSION PLANS (1975–2019)



Source: Authors' analysis of:

Zorn, Paul. "Surveys of State and Local Government Employee Retirement Systems." *Government Finance Review*. August 1993. <https://www.questia.com/magazine/1G1-14379961/surveys-of-state-and-local-government-employee-retirement>;

S. Mitchell, Olivia and Robert S. Smith. "Pension Funding in the Public Sector." The MIT Press. *The Review of Economics and Statistics* 76, 2 (May 1994), 281. <http://www.uh.edu/~bsorensen/Mitchell%26SmithPensions.pdf>;

"Pension Task Force Report on Public Employee Retirement Systems." House Committee on Education and Labor. Purdue University Library, August 15, 1978. <https://babel.hathitrust.org/cgi/pt?id=pur1.32754076274483;view=1up;seq=6>;

State and Local Public Plans Database. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

<https://publicplansdata.org/public-plans-database/download-full-data-set/> (accessed January 2020)

²⁶ McCormick, Liz and Alex Harris. *QE May Be Over, But the Fed's U.S. Debt Hoard Is About to Soar*. Bloomberg Businessweek, May 21, 2019, <https://www.bloomberg.com/news/articles/2019-05-21/qe-may-be-over-but-the-fed-s-u-s-debt-hoard-is-set-to-double>

The same downward trend is observed for the “natural rate of interest,” which is an inflation-adjusted rate that’s consistent with the economy operating at its full potential (like the current late stage of U.S. economic cycle).²⁷

According to the Group of Thirty, lower Treasury yields are a consequence of various factors, such as demographic shifts and so-called “quantitative easing” (QE) monetary policy, with Federal Reserve and other central banks massively repurchasing long-term government bonds between 2008–14.²⁸ Banks concurrently lowered their benchmark interest rates to add liquidity to the markets and boost economic growth after the 2007–08 crisis.

With public pension plans still holding a considerable portion of their assets in long-term U.S. Treasuries and other fixed income securities, lower risk-free rates suggest lower potential returns for pension portfolios.

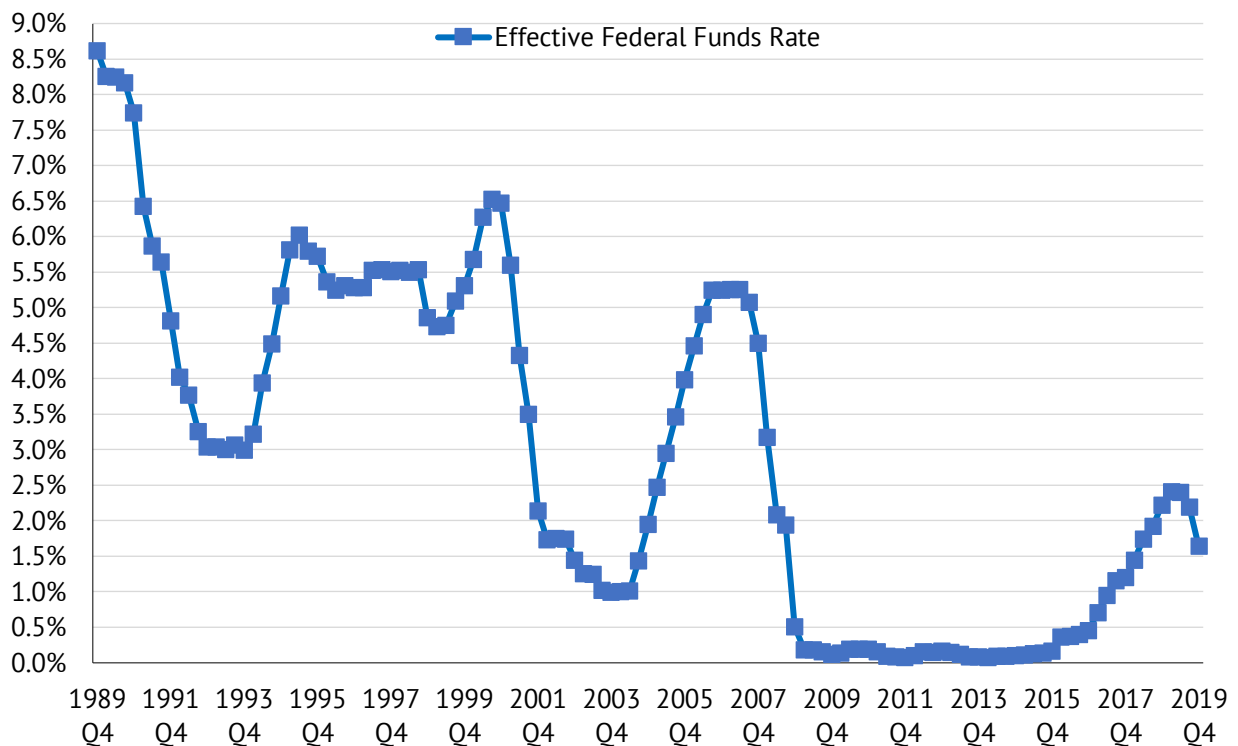
3.5

ULTRA-LOW INTEREST RATES AND NEGATIVE BOND YIELDS

The ultra-low interest rate environment is part of the “new normal” reality. For the last few decades we’ve seen a dramatic downward shift in the U.S. federal funds rates—even negative rates in some countries. And after a series of hikes over the 2016–18 period—under the premise of higher economic potential—in 2019 the U.S. Federal Reserve went back to cutting rates again. By the fourth quarter of 2019, rates went down from 2.5% to a 1.50%–1.75% range. See Figure 6.

²⁷ Torry, Harriet. “Fed Decision Makers Wrestle With So-Called Natural Rate.” *The Wall Street Journal*. June 12, 2016. <https://www.wsj.com/articles/fed-decision-makers-wrestle-with-so-called-natural-rate-1465751241>

²⁸ Timiraos, Nick and Paul Kiernan. “Fed Will Purchase Treasury Bills at Least Into Second Quarter of 2020.” *The Wall Street Journal*. October 11, 2019. https://www.wsj.com/articles/fed-will-purchase-treasury-bills-at-least-into-second-quarter-of-2020-11570806265?mod=hp_major_pos1

FIGURE 6: U.S. EFFECTIVE QUARTERLY FEDERAL FUNDS RATE (1989 Q4–2019 Q4)

Source: "Effective Federal Funds Rate." Board of governors of the Federal Reserve System (US) and Federal Reserve of St. Louis. <https://fred.stlouisfed.org/series/FEDFUNDS#0> (accessed February 2020)

As the U.S. economy cools down, the Federal Reserve has vouched to provide even more support. And the recent COVID-19 pandemic forced the Federal Reserve to cut the federal funds rate twice in March of 2020 to near zero again (to 0.00–0.25% range).²⁹ This reversal in direction may signal economic distress to investors holding the belief that tepid returns on government bonds might be preferential to potential losses from equities in a recession scenario. Thus, demand for long-term bonds goes up while the yields they pay go down, exacerbating an already difficult situation.

²⁹ Timiraos, Nick. "Fed Cuts Rates to Near Zero and Will Relaunch Bond-Buying Program." *The Wall Street Journal*. March 15, 2020, <https://www.wsj.com/articles/fed-faces-crucial-decisions-to-alleviate-virus-shock-11584303662>



...demand for long-term bonds goes up while the yields they pay go down, exacerbating an already difficult situation.



Ultra-low and negative interest rates are prevalent in many other countries. In fact, *negative* interest rates—essentially a disincentive to save—are already stamping through Europe³⁰ (10-year government yields in Switzerland³¹ and Germany,³² now at -0.82%, -0.68%, respectively) and Japan³³ (now at -0.11%), where debt and demographics might be most representative of the developed world's future.

“A once-unthinkable collapse in global bond yields is forcing pension funds to buy bonds that offer negative returns—putting the financial security of future retirees in jeopardy,” according to Bloomberg.³⁴ The prospect of U.S. Treasury yields dropping below zero may now seem remote, but is not out of the realm of future possibilities.

What's more, the prevalence of negative interest rates across the developed world incentivizes investors to consume, rather than save, calling into question standard economic theories about the time value of money. Future consumption is not necessarily worth less than present consumption—a conclusion that would come as a shock to readers of finance textbooks in recent decades. Negative interest rates are indeed part of a “new normal” economic environment that further undercuts fixed income returns for public pensions.

³⁰ Joffe, Marc. “Negative Interest Rates: The Implications for Municipal Bonds and Pension Systems.” Reason Foundation, September 4, 2019. <https://reason.org/commentary/negative-interest-rates-the-implications-for-municipal-bonds-and-pension-systems/>

³¹ “Switzerland Govt Bonds 10 Year Note Generic Bid Yield.” Bloomberg. <https://www.bloomberg.com/quote/GSWISS10:IND> (accessed March 2020)

³² “Germany 10 Year Government Bond.” *The Wall Street Journal*. <https://www.wsj.com/market-data/quotes/bond/BX/TMBMKDE-10Y> (accessed March 2020)

³³ “Japan 10 Year Government Bond.” *The Wall Street Journal*. <https://www.wsj.com/market-data/quotes/bond/BX/TMBMKJP-10Y> (accessed March 2020)

³⁴ *Pension funds reel from 'financial vandalism' of falling yields*. Bloomberg, August 27, 2019. <https://www.pionline.com/markets/pension-funds-reel-financial-vandalism-falling-yields>

TEXT BOX 3: Inverted Yield Curve and the Next Economic Crisis

According to Reuters, the inversion of the “yield curve” (commonly designated as a difference between two-year and 10-year Treasury yields), is a classic signal of a looming recession. To be precise, the U.S. fell into recession each time the yield curve inverted in the past 50 years. It offered a false signal just once in that time. The last recession cost state and local retirement systems around 30% of their portfolio assets.

Last August (2019), the yield curve briefly inverted, raising the stakes for another financial downturn down the road. Inversion is believed to be mainly triggered by heightened demand on long-term and short-term bonds that are mainly guided by policymakers.

Latest estimates from the New York Fed portend as high as a 31% chance of the U.S. entering a recession in the first quarter of 2021 (based on the three-month bill rate). According to Charles Schwab, the median span from an inversion in the curve and recessions historically was 17 months. It’s worth noting, however, that there is little consistency historically in terms of timing or capital market performance in such scenarios.

Sources:

Leong, Richard, Dan Burns, Karen Brettell. *Explainer: Countdown to recession - What an inverted yield curve means*. Reuters, August 13, 2019. <https://www.reuters.com/article/us-usa-economy-yieldcurve-explainer/explainer-countdown-to-recession-what-an-inverted-yield-curve-means-idUSKCN1V320S>

“Probability of US Recession Predicted by Treasury Spread.” Federal Reserve Bank of New York.

https://www.newyorkfed.org/medialibrary/media/research/capital_markets/Prob_Rec.pdf (accessed March 2020)

Ann Sonders, Liz, Jeffrey Kleintop and Brad Sorensen. “Schwab Market Perspective: Storm Clouds Building.” Charles Schwab. *Advisor Perspectives*, August 31, 2019.

<https://www.advisorperspectives.com/commentaries/2019/08/31/schwab-market-perspective-storm-clouds-building>

PART 4

MAJOR INVESTMENT RETURN FORECASTS CONFIRM THE LOW RETURN EXPECTATIONS

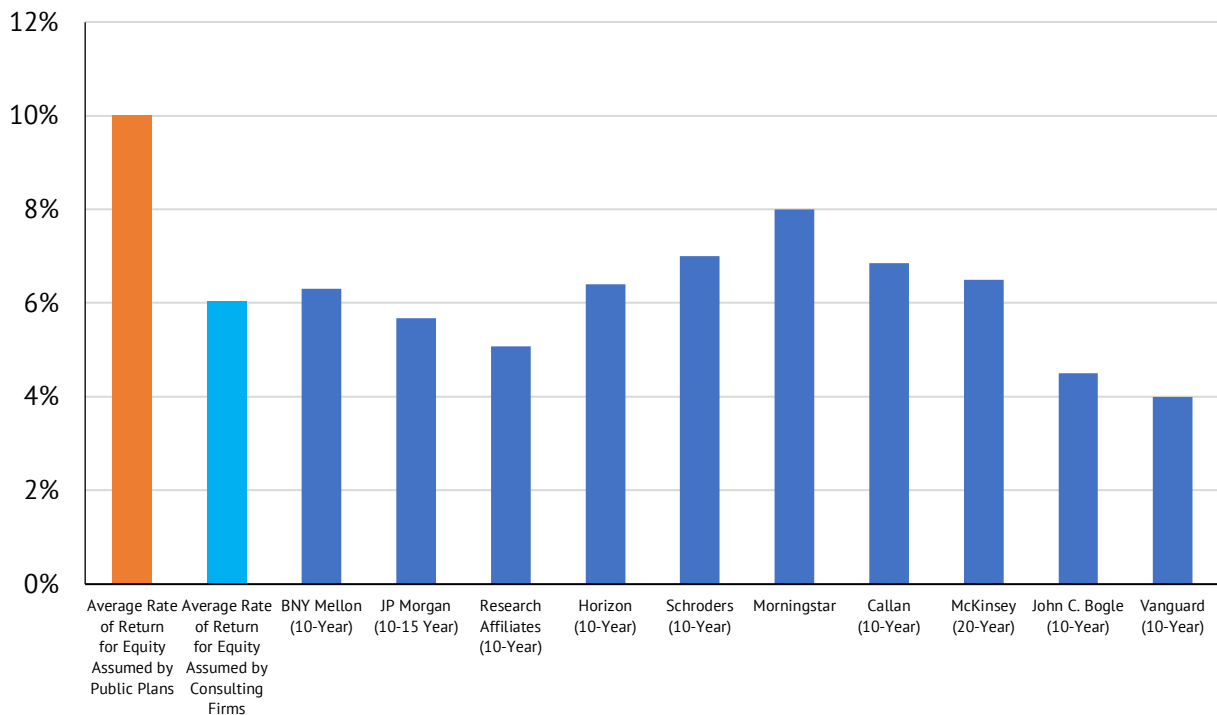
According to a February 2020 brief by the National Association of State Retirement Administrators, “[a] growing number of investment return projections are concluding that near-term returns will be materially lower than both historic norms as well as projected returns over longer timeframes.”

Indeed, most of the prominent asset management firms anticipate subdued returns on equities over the next 10–15 years, compared to the past three decades³⁵ (see Figure 7). With public pension plans investing primarily in equities that have lower return expectations, prominent industry consultant Horizon Actuarial Services, LLC—which in 2019 surveyed almost three dozen investment firms—now expects the 10-year and 20-year return forecast for diversified institutional portfolios, like public pensions, to average out to just 6.11% and 7.01%, respectively.³⁶

³⁵ *Vanguard Economic and Market Outlook for 2019: Down But not Out*. Vanguard and International Monetary Fund, December 2019. <https://pressroom.vanguard.com/nonindexed/Research-Vanguard-Economic-and-Market-Outlook-2019-120618.pdf>

³⁶ *Survey of Capital Market Assumptions: 2019 Edition*. Horizon Actuarial Services, LLC., August 2019. http://www.horizonactuarial.com/uploads/3/0/4/9/30499196/horizon_cma_survey_2019_v0819.pdf

FIGURE 7: REVIEW OF MAJOR EQUITY RETURN FORECASTS (10-20 YEARS)



Source: Authors’ analysis of publicly available data (2018–19) provided by investment consultants. Average return on equities assumed by public pension plans references 2016 data.

Sources of data:

Fidahusein, Riaz and Keith Wade. “10-year return forecasts(2018-28).” Schroders, December 2018.

https://www.schroders.com/de/sysglobalassets/digital/insights/2019/pdfs/2019_march_10-year-returns_222058_v2.pdf

“2018-2027 Capital Market Projections.” Callan LLC., January 2018. <https://www.callan.com/wp-content/uploads/2018/01/Callan-2018-2027-Capital-Market-Projections-Charticle.pdf>

“Morningstar Market Assumptions.” Morningstar.

https://admainnew.morningstar.com/webhelp/dialog_boxes/cs_db_editassumptions.htm (accessed December 2019)

Benz, Christine. *What Jack Bogle Expects From the Market*. Morningstar, October 15, 2018.

<https://www.morningstar.com/articles/885733/what-jack-bogle-expects-from-the-market>

“Survey of Capital Market Assumptions: 2019 Edition.” Horizon Actuarial Services, LLC., August 2019.

http://www.horizonactuarial.com/uploads/3/0/4/9/30499196/horizon_cma_survey_2019_v0819.pdf

Dobbs, Richard, Tim Koller, Susan Lund, Sree Ramaswamy, Jon Harris, Mekala Krishnan, and Duncan Kauffman.

“Diminishing Returns: Why Investors May Need To Lower Their Expectations.” McKinsey & Company, May 2016.

<http://www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/why-investors-may-need-to-lower-their-sights>

Vanguard Economic and Market Outlook for 2019: Down But not Out. Vanguard, December 2019.

<https://pressroom.vanguard.com/nonindexed/Research-Vanguard-Economic-and-Market-Outlook-2019-120618.pdf>

“10-year capital market return assumptions.” BNY Mellon Securities Corporation.

<https://im.bnymellon.com/us/en/individual/> (accessed September 2019)

“Portfolio and Asset Class Expected Returns.” Asset Allocation Interactive. Research Affiliates.

<https://interactive.researchaffiliates.com/asset-allocation/#!/?currency=USD&model=ER&scale=LINEAR&terms=REAL> (accessed December 2019)

“2019 Long-Term Capital Market Assumptions.” 23rd Annual Edition. J.P. Morgan Asset Management.

<https://am.jpmorgan.com/gi/getdoc/1383581744857> (accessed October 2019)

Similarly, averaging out return expectation on equities from the investment consultants in Figure 7 suggests 6.03% average equity yields in the next 10–20 years. Essentially, such subdued return expectations suggest a cautionary tale about the chances of a typical U.S. public pension plan that bets on achieving average returns above 7% in the mid-term. For example, the latest analysis of the Teachers' Retirement System of Louisiana (TRSL) by the Pension Integrity Project at Reason Foundation shows that the plan had only about a 39% chance of achieving returns at or above its 2019 target of 7.55% over the next decade, and a 55% chance over the next 20 years, according to the Horizon's 2019 capital market assumptions (see Table 1).

TABLE 1: PROBABILITIES OF TRSL ACHIEVING ASSUMED RATE OF RETURN, 2019 CAPITAL ASSUMPTIONS

Possible Rates of Return	Probability of TRSL Achieving a Given Return Based on:							
	TRSL Forecast		Short-Term Market Forecast				Long-Term Market Forecast	
	TRSL Forecast	TRSL Historical Returns	Research Affiliates 10-Year Forecast	JP Morgan 10-15 Year Forecast	BNY Mellon 10-Year Forecast	Horizon 10-Year Market Forecast	BlackRock 20-Year Forecast	Horizon 20-Year Market Forecast
9.0%	37.7%	14.5%	11.2%	16.5%	15.9%	22.0%	33.3%	34.5%
8.0%	51.2%	25.1%	19.7%	27.8%	27.5%	33.0%	46.6%	48.4%
7.55%	57.7%	31.0%	24.5%	33.8%	34.1%	38.8%	52.2%	54.8%
7.0%	65.5%	38.6%	31.2%	42.0%	42.9%	46.7%	59.7%	62.5%
6.5%	72.0%	45.5%	38.0%	49.5%	50.8%	53.8%	66.2%	69.1%
6.0%	77.9%	53.9%	45.1%	57.1%	58.0%	61.0%	72.1%	75.1%
5.0%	86.8%	68.4%	59.6%	71.6%	72.6%	73.1%	82.4%	85.0%

NOTE: Orange highlights designate return probabilities, for each financial consultant, that are closest to 50%. Row with a bolded border indicates results for TRSL 2019 assumed rate of return.

Source: Pension Integrity Project's Monte Carlo model is based on TRSL 2019 asset allocation and reported expected returns by asset class. Forecasts of returns by asset class generally by BNYM, JPMC, BlackRock, Research Affiliates, and Horizon Actuarial Services were matched to the specific asset class of TRSL. Probability estimates are approximate as they are based on the aggregated return by asset class. For complete methodology contact Reason Foundation.

The Pension Integrity Project's current assessment of the likely range of future average returns is more aligned with the short- and mid-term capital assumptions published by leading financial advisors, which suggest subdued returns for institutional investors. Also, longer-term forecasts tend to be less accurate because of the "reversion to mean" assumption—a principle used in finance that returns are likely to revert to the long-term historical averages. The "reversion to mean" assumption should be viewed with caution though, given historical changes in interest rates and a variety of other market conditions that increase uncertainty over longer projection periods, relative to shorter ones. Given the supporting evidence of the "new normal" economic environment and the many factors diminishing the outlook for future returns, relying on hopes that the last 30-year returns will repeat themselves appears to be an imprudent position to take for policymakers and plan fiduciaries.

PART 5

RISING RISK ASSUMED BY PUBLIC PENSION PLANS

5.1

DECLINE IN ACTUAL RETURNS INDICATES RISING RISK ASSUMED BY PUBLIC PLANS

Lower investment yields essentially mean that most public plans will assume increasing risks (measured by the standard deviation of annual portfolio returns) to maintain their return assumptions. That is, actual investment returns are likely to jump further above and below the average portfolio returns than before. In short, a 7.25% expected return today generally entails substantially higher volatility than a 7.25% expected return 20 years ago.

“

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For example, Andrew Biggs of the American Enterprise Institute has estimated that the volatility (risk) for a pension portfolio with the same expected return of 8% had been about 2.7% in 1985, increased to 4.3% by 1995, and approximately tripled by 2013 to 12%.³⁷

The Nelson A. Rockefeller Institute of Government in its simulation study used the same estimates and concluded that a one-standard deviation shortfall, resulting from a single year's investment underperformance, would now (assuming the same 12% volatility) amount to more than one-quarter of a year's worth of state and local government taxes.³⁸

As Tom Aaron, vice president of Moody's Investors Service, puts it: "Not all, but many [pension plans], have downside exposure to capital market performance."³⁹

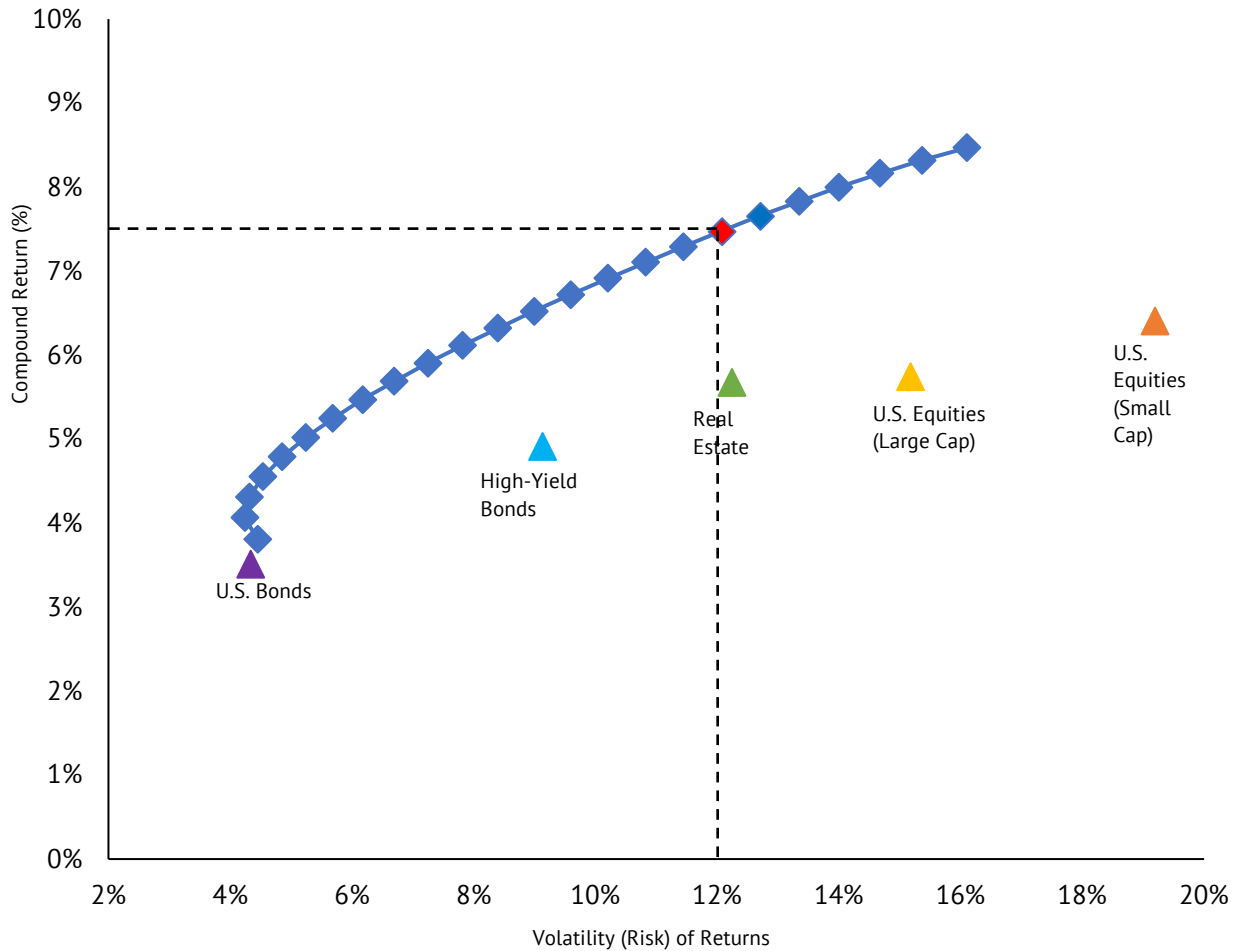
Back to our examples, the Pension Integrity Project's analysis of Louisiana TRSL—based on 2019 capital assumptions—suggests that the same TRSL pension plan is likely to experience roughly 12% year-over-year volatility in portfolio returns over the next 10–20 years assuming no changes to its asset allocations (See Figure 8).

³⁷ G. Biggs, Andrew. "The Multiplying Risks of Public Employee Pensions to State and Local Government Budgets." American Enterprise Institute, December 2013. https://www.aei.org/wp-content/uploads/2013/12/-the-multiplying-risks-of-public-employee-pensions-to-state-and-local-government-budgets_142010313690.pdf

³⁸ J. Boyd, Donald and Yimeng Yin. "Appropriateness of Risk-Taking by Public Pension Plans." The Rockefeller Institute of Government. State University of New York, February 2017. https://www.albany.edu/slrg/Reports_and_Briefs/2017-02-01-Risk_Taking_Appropriateness.pdf

³⁹ Comtois, James. "Government credit ratings vulnerable to downside pension risk." *Moody's Pensions & Investments*. December 12, 2019. <https://www.pionline.com/pension-funds/government-credit-ratings-vulnerable-downside-pension-risk-moodys>

FIGURE 8: TRSL EXPECTED INVESTMENT RISKS TO EARN THE ASSUMED 7.55% RETURN (BASED ON SHORT-TERM AND LONG-TERM 2019 PROJECTIONS)



Source: Pension Integrity Project analysis of TRSL actuarial valuation reports and CAFRs. Return forecasts by asset class comes from BNYM, JPMC, Research Affiliates, BlackRock, and Horizon Associates 2019 data and were matched to the specific asset class of TRSL. For complete methodology contact Reason Foundation. The volatility (risk) of returns shows the aggregate standard deviation of the forecasted portfolio returns, weighted by volatility of each asset class. Compound returns show geometric average returns.

As we have shown previously in our solvency analysis, back in 1996 TRSL’s volatility of investment returns stood at just 9%.⁴⁰ This example shows that year-over-year return volatility/risk for average state and local pension plans actually increases, not decreases, over time. This trend raises the odds of severe investment losses down the road, further undermining long-term solvency.

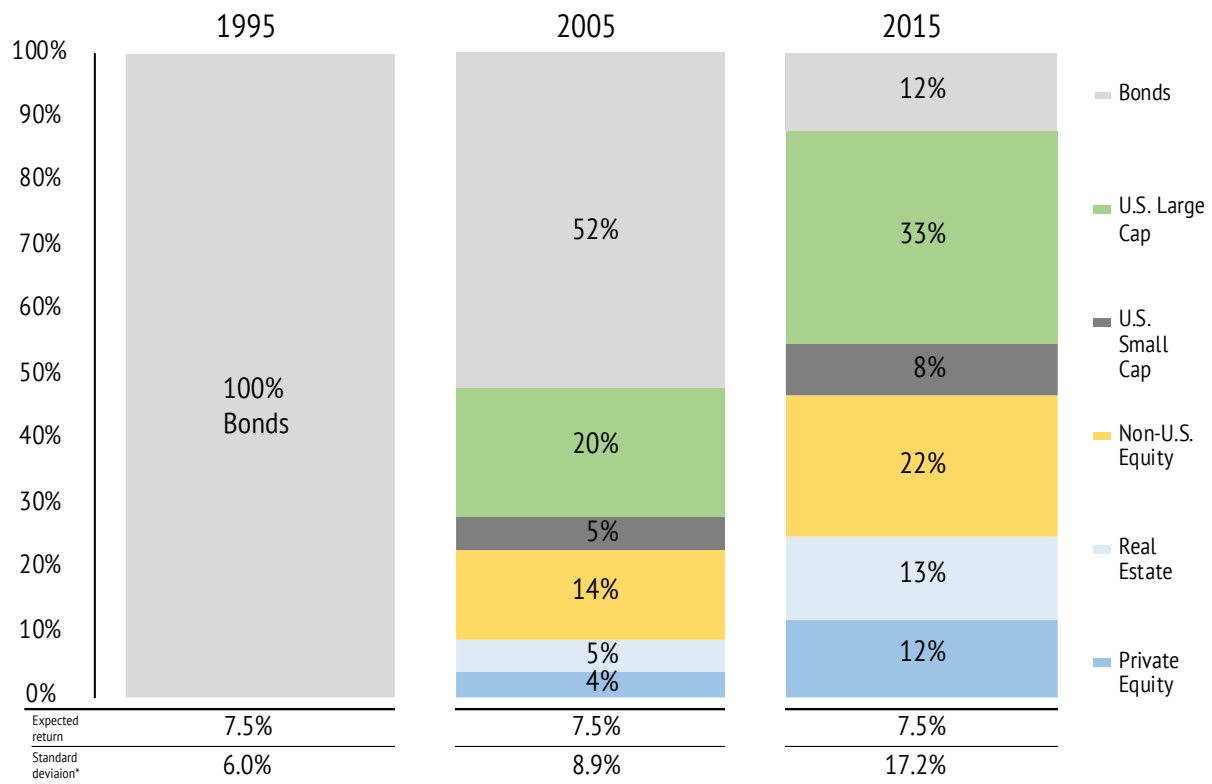
⁴⁰ Gilroy, Leonard, Anil Niraula, Zachary Christensen and Steven Gassenberger. “Teachers’ Retirement System of Louisiana (TRSL) Pension Solvency Analysis.” Pension Integrity Project at Reason Foundation, June 18, 2019. <https://reason.org/wp-content/uploads/louisiana-trsl-pension-solvency-analysis.pdf>.

5.2

THE TREND OF EMBRACING, INSTEAD OF CURBING, INVESTMENT RISKS

Clearly, this shows that, while the capital market realities have changed, the public pension plans have not significantly revised their expectations. And, many appear to be embracing⁴¹—instead of curbing—the so-called “high-risk/high-reward” approach—by allocating more toward equities and less transparent and more risky alternatives, such as real estate and private equity, all merely to maintain current assumed rates of investment return (see Figure 9).⁴²

FIGURE 9: AVERAGE ASSET ALLOCATIONS BY PUBLIC PENSIONS, 1995-2015



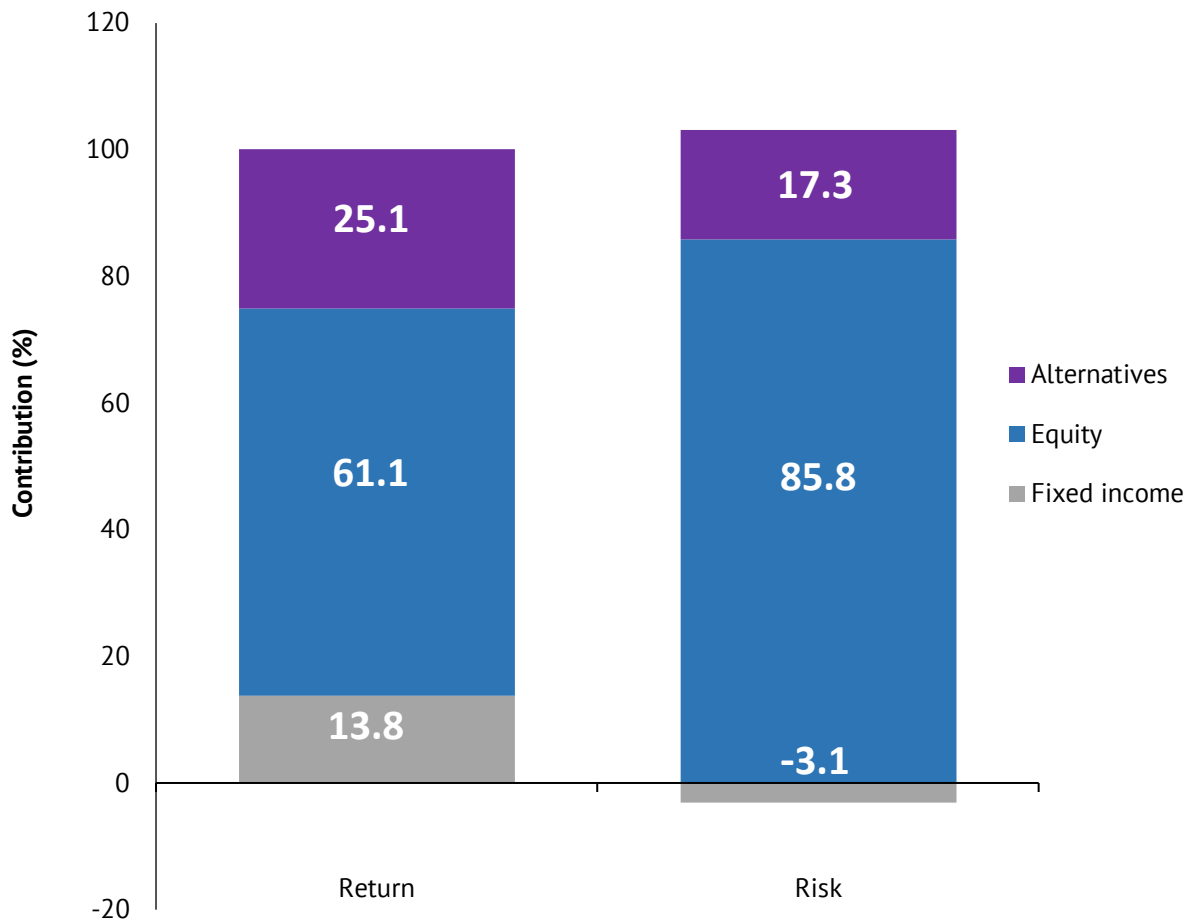
Source: Martin, Timothy W. “Pension Funds Pile on Risk Just to Get a Reasonable Return. Callan Associates.” *The Wall Street Journal*. May 31, 2016. <http://www.wsj.com/articles/pension-funds-pile-on-the-risk-just-to-get-a-reasonable-return-1464713013>

⁴¹ Malanga, Steven. *State pension funds keep increasing risky investments—as pension debt mounts*. Manhattan Institute for Policy Research. *City Journal*. Summer 2019. <https://www.city-journal.org/state-pension-funds-investments-debt>

⁴² Aubry, Jean-Pierre and Kevin Wandrei. “Investment Update: How Do Public Plans Value Their Assets?” Center for Retirement Research at Boston College (CRR), September 2019. <https://www.slge.org/assets/uploads/2018/10/2018-10-fundingbrief.pdf> (accessed February 2020)

Stocks appear to be the most relevant contributor to rising investment risks. J.P. Morgan Asset Management finds that with an average public pension plan allocating as much as 61% of assets to equities, this same asset class now accounts for as much as 86% of the overall pension plans' investment return volatility (risks) (see Figure 10).

FIGURE 10: ASSET ALLOCATION AND RISK CHARACTERISTICS OF A TYPICAL PUBLIC PENSION PLAN



Source: Sharma, Pulkit. Michael Buchenholz. "Real Assets' Role in Public Pension Portfolios." Public Plans Data. Center for Retirement Research at Boston College. National Association of State Retirement Administrators. J.P. Morgan Asset Management, October 01, 2018. <https://am.jpmorgan.com/us/institutional/library/real-assets-for-publics>

This significant shift in the risk profile means that there is substantial uncertainty about public plans' future performance or contribution requirements, and that historical returns over the last 30 years are not a good indicator of future returns.

This is particularly concerning as the lower yield environment has proven to incentivize pension plans to take on higher investment risks, according to the Federal Reserve (see text box 4).⁴³

Another recent simulation study by scholars from the University at Albany State University of New York and Brigham Young University—using stochastic (random) analysis of a hypothetical pension plan under low-return environment—showed little bang for the buck as far as more risky allocations are concerned.⁴⁴ Specifically, adopting more risky investment strategies produced only minimal differences in the simulated median funded ratios and ADEC contributions over time. This puts into question any additional returns pension plans may hope to salvage from the added investment risks in the low-yield environment.

TEXT BOX 4: Lower Yields Incentivize Higher Investment Risks

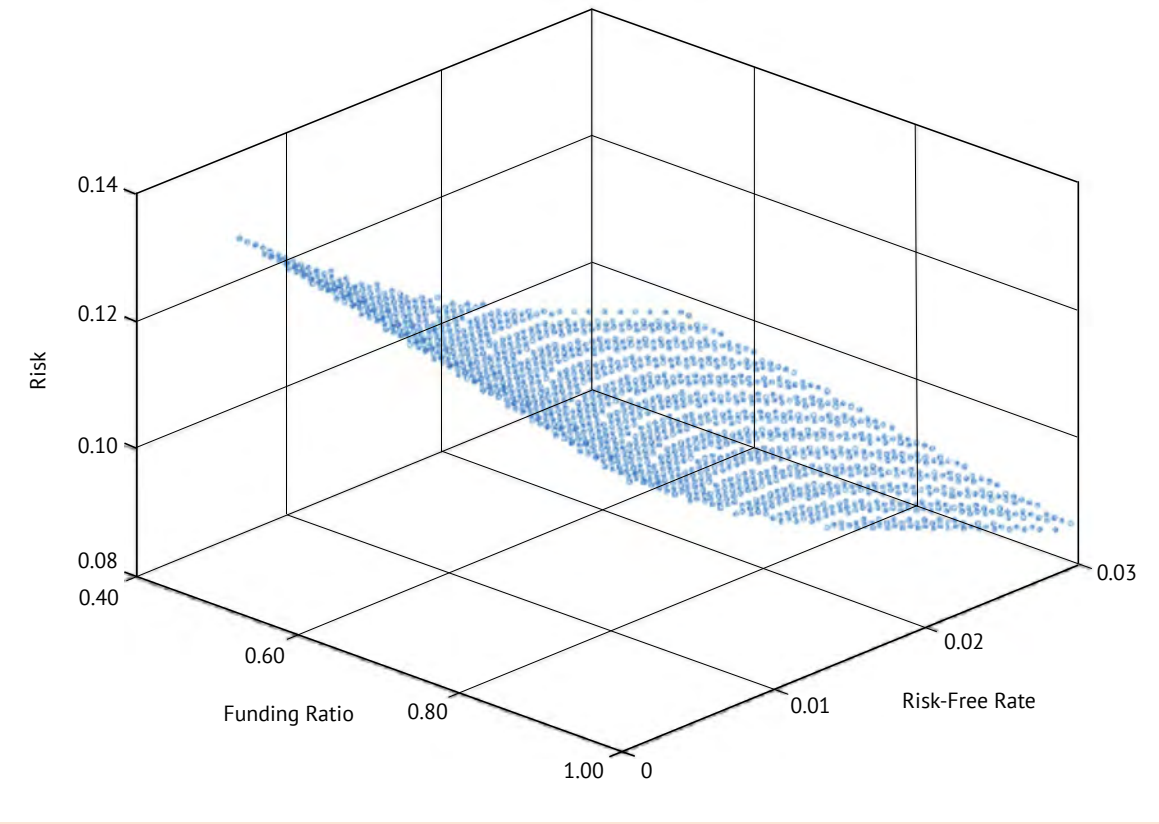
In-depth analysis by the Federal Reserve has recently confirmed the premise that U.S. public pension funds reach for yield by taking more investment risk in a low interest rate environment. Specifically, the study finds that pension funds, on average, take more risk when risk-free rates and funding ratios are lower. And that as much as one-third of the public pension funds' total risk is related to underfunding and low interest rates.

Figure 11 shows how investment risks (Y-axis)—measured as the proportion of risky assets in the fund's asset portfolio—increase as public pension plans' funded status (X-axis) and risk-free rates (Z-axis) drop. The figure presents the relationship between pension fund asset risk, the plan's funding ratio, and the risk-free interest rate when states are unable to default on their debt. The funding ratio is based on pension liabilities rediscounted by the risk-free rate.

⁴³ Lu, Lina, Matthew Pritsker, Andrei Zlate, Kenechukwu Anadu, and James Bohn. "Reach for Yield by U.S. Public Pension Funds." Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington, D.C., June 6, 2019. <https://www.federalreserve.gov/econres/feds/files/2019048pap.pdf>

⁴⁴ Chen, Gang, David Matkin and Hyewon Kang, "Costs and liabilities of US public pension systems in a low-return environment." *Journal of Pension Economics and Finance*. 2020. <https://www.cambridge.org/core/journals/journal-of-pension-economics-and-finance/article/costs-and-liabilities-of-us-public-pension-systems-in-a-lowreturn-environment/2B3B42DE70DC944C2866135ACB999B30> (accessed February 2020)

FIGURE 11: RISK VERSUS RISK-FREE RATE AND PENSION FUNDING RATIO, WHEN STATE DEBT IS RISK-FREE



Source: The Federal Reserve Board, <https://www.federalreserve.gov/econres/feds/files/2019048pap.pdf>

PART 6

IMPLICATIONS OF THE "NEW NORMAL" FOR PUBLIC PENSION FINANCES AND SOLVENCY

In a 2012 poll, 38 of 39 leading economists agreed with this statement:⁴⁵ "By discounting pension liabilities at high interest rates [discount rates and return assumptions are misguidedly used interchangeably]⁴⁶ under government accounting standards, many U.S. state and local governments understate their pension liabilities and the costs of providing pensions to public-sector workers." This observation is even more germane today, with ever-growing costs of servicing and paying down pension debt.

⁴⁵ Richwine, Jason. "Nine Fallacies Used to Defend Public-Sector Pensions." The Heritage Foundation, February 5, 2013. <https://www.heritage.org/social-security/report/nine-fallacies-used-defend-public-sector-pensions>

⁴⁶ Bui, Truong and Anthony Randazzo. "Why Discount Rates Should Reflect Liabilities: Best Practices for Setting Public Sector Pension Fund Discount Rates." Reason Foundation, September 2015. https://reason.org/wp-content/uploads/files/pension_discount_rates_best_practices.pdf

Furthermore, unrealistic return targets produce a plethora of cascading effects downstream. For example, setting a high return target, especially combined with long amortization schedules, sometimes results in undercalculating contribution requirements to the extent that even making 100% of actuarially required contributions will fall short of reducing unfunded liabilities. Oftentimes, annual pension contributions fail to cover even the interest payments on past pension debt (so-called “negative amortization”). For example, per Reason Foundation Pension Integrity Project’s updated analysis, investment underperformance accounts for over 50% of the \$6.3 billion unfunded liabilities that the Teachers’ Retirement System of Louisiana added between 2000 and 2019.⁴⁷ Another roughly 10%–15% comes from negative amortization.



In short, keeping the investment return target higher than the “new normal” suggests (i.e. above 7%) may bring pension contribution rate relief in the mid-term, but will likely catch up in the long-term in the form of mounting pension debt that increases with shortfalls in the pension plans’ core two revenue sources: investment returns and contributions.



In short, keeping the investment return target higher than the “new normal” suggests (i.e. above 7%) may bring pension contribution rate relief in the mid-term, but will likely catch up in the long-term in the form of mounting pension debt that increases with shortfalls in the pension plans’ core two revenue sources: investment returns and contributions. If, for example, pension trustees are wrong on the expected investment returns (and on the discount rate), then the deferred normal cost—which is usually shared between employees and employers—gradually converts, and multiplies, into additional unfunded pension liabilities (i.e. pension debt), which are usually borne solely by taxpayers.

⁴⁷ Gilroy, Leonard, Anil Niraula, Zachary Christensen and Steven Gassenberger. “Teachers’ Retirement System of Louisiana (TRSL) Pension Solvency Analysis.” Pension Integrity Project at Reason Foundation, June 18, 2019. <https://reason.org/wp-content/uploads/louisiana-trsl-pension-solvency-analysis.pdf>.

Furthermore, optimistic return expectations misalign with liability durations and undermine plan's future cash flows. This is mainly due to many mature state pension plans, unlike newly established ones, expectedly needing to pay out a significant amount of their pension benefits over the next 1–10 years or so (for example, the duration of TRSL's actuarial liability in 2019 was 12.5 years).⁴⁸ This means that large portions of current assets will not be around (in years 11–30) to make up for the lower earnings anticipated in the next decade or so. Adjusting return assumptions per mid-term projections, as opposed to long-term, should help curb investment losses and better align assumptions with the average timing of pension payouts.

To provide more transparency on this matter, the new Governmental Accounting Standards Board (GASB) standards 67 and 68 nudge public pensions and governments to report a simplified sensitivity analysis of net pension liability using a +/-1 percentage point change in the plan's current discount rate, even requiring the more financially troubled pension plans to report so-called blended discount rates designed to provide a more accurate insight into overall solvency.⁴⁹ This provides a more holistic picture, although only on paper, for the public on possible variations in the value of public pension debt.

Clearly, a combination of below 6% returns over the 2000 to 2018 period and an average 12% year-over-year return volatility among U.S. public pensions is a sign of undercompensated market risks. However, it is also true that lowering discount rates will necessarily increase pension contributions in the short to near term.

However, by doing so sooner rather than later, pension trustees would help avoid paying compounding interest on pension debt, reduce the long-term fiscal burden for taxpayers by stabilizing contribution requirements, improve the solvency of the retirement system, and deliver in full on pension promises made to public employees.

⁴⁸ "2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana." Gabriel, Roeder, Smith & Company on behalf of the Louisiana Legislative Auditor. State of Louisiana, January 15, 2020. https://lla.la.gov/documents/reports-data/actuary/2019%20Actuarial%20Valuation%20on%20FRS%20by%20LLA_011520.pdf

⁴⁹ "Summary—Statement No. 67." Government Accounting Standards Board (GASB), July 2012. https://www.gasb.org/jsp/GASB/Pronouncement_C/GASBSummaryPage&cid=1176160219444

PART 7

CONCLUSION

After the relative stability of public pensions prior to 2000, the turn of the century brought an unwelcome new reality of widespread declines in pension solvency and the emergence of the “new normal” lower-yield investment environment, characterized by low dividend yields, ultra-low interest rates, subdued economic growth, and increased market volatility/risk. Most financial advisors suggest that investment return expectations for equities and fixed income products over the next 10–15 years will be lower than in the past 30 years.

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Faced with such headwinds, it is important for policymakers and pension trustees to understand that maintaining overly optimistic return assumptions can hurt the financial health of public pensions and undermine funding of other public priorities; long-term return assumptions should be revised accordingly. Further, given the transition toward

riskier asset allocation strategies, public pension plans should consider the potential negative impacts of higher investment risks (e.g. increasing exposure to downside risks and large losses).

Each state and local government pension plan has its own unique set of problems, and budget trade-offs are a large part of the equation. Yet, failing to respond to the diminished investment return environment undermines trustees' fiduciary obligations and pension solvency in the long run. Properly estimating promised pension liabilities and adopting strong funding policies designed to pay off legacy unfunded liabilities as fast as possible to minimize the risk of new debt materializing are in the best interests of both active and retired public employees, as well as taxpayers at large.

Acknowledging the evidence supporting the changing investment reality and the "new normal" for pension plans, taking proactive steps to find more ways to secure promised pensions would position state and local public pension systems to better weather any economic, capital market, or other fiscal storms in the long run.

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